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## 40 C.F.R. § 600.210-12

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### Calculation of fuel economy and CO<sub>2</sub> emission values for labeling.

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(a) *General labels.* Except as specified in paragraphs (d) and (e) of this section, fuel economy and CO<sub>2</sub> emissions for general labels may be determined by one of two methods. The first is based on vehicle-specific model-type 5-cycle data as determined in § 600.209-12(b). This method is available for all vehicles and is required for vehicles that do not qualify for the second method as described in § 600.115 (other than electric vehicles). The second method, the derived 5-cycle method, determines fuel economy and CO<sub>2</sub> emissions values from the FTP and HFET tests using equations that are derived from vehicle-specific 5-cycle model type data, as determined in paragraph (a)(2) of this section. Manufacturers may voluntarily lower fuel economy (MPG) values and raise CO<sub>2</sub> values if they determine that the label values from any method are not representative of the in-use fuel economy and CO<sub>2</sub> emissions for that model type, but only if the manufacturer changes both the MPG values and the CO<sub>2</sub> value and revises any other affected label value accordingly for a model type (including but not limited to the fuel economy 1-10 rating, greenhouse gas 1-10 rating, annual fuel cost, 5-year fuel cost information). Similarly, for any electric vehicles and plug-in hybrid electric vehicles, manufacturers may voluntarily lower the fuel economy (MPGe) and raise the energy consumption (kW-hr/100 mile) values if they determine that the label values are not representative of the in-use fuel economy, energy consumption, and CO<sub>2</sub> emissions for that model type, but only if the manufacturer changes both the MPGe and the energy consumption value and revises any other affected label value accordingly for a model type. Manufacturers may voluntarily lower the value for electric driving range if they determine that the label values are not representative of the in-use electric driving range.

(1) *Vehicle-specific 5-cycle labels.* The city and highway model type fuel economy determined in § 600.209-12(b), rounded to the nearest mpg, and the city and highway model type CO<sub>2</sub> emissions determined in § 600.209-12(b), rounded to the nearest gram per mile, comprise the fuel economy and CO<sub>2</sub> emission values for general fuel economy labels, or, alternatively;

(2) *Derived 5-cycle labels.* Derived 5-cycle city and highway label values are determined according to the following method:

(i)

(A) For each model type, determine the derived five-cycle city fuel economy using the following equation and coefficients determined by the Administrator:

$$\text{Derived 5-cycle City Fuel Economy} = \frac{1}{\left\{ \text{City Intercept} \right\} + \frac{\left\{ \text{City Slope} \right\}}{\text{MT FTP FE}}}$$

Where:

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City Intercept = Intercept determined by the Administrator based on historic vehicle-specific 5-cycle city fuel economy data. City Slope = Slope determined by the Administrator based on historic vehicle-specific 5-cycle city fuel economy data. MT FTP FE = the model type FTP-based city fuel economy determined under § 600.208-12(b), rounded to the nearest 0.0001 mpg.

(B) For each model type, determine the derived five-cycle city CO<sub>2</sub> emissions using the following equation and coefficients determined by the Administrator:

$$\text{Derived 5-cycle City CO}_2 = \text{City Intercept} \cdot A + \text{City Slope} \cdot \text{MT FTP CO}_2$$

Where: City Intercept = Intercept determined by the Administrator based on historic vehicle-specific 5-cycle city fuel economy data. A = 8,887 for gasoline-fueled vehicles, 10,180 for diesel-fueled vehicles, or an appropriate value specified by the Administrator for other fuels. City Slope = Slope determined by the Administrator based on historic vehicle-specific 5-cycle city fuel economy data. MT FTP CO<sub>2</sub> = the model type FTP-based city CO<sub>2</sub> emissions determined under § 600.208-12(b), rounded to the nearest 0.1 grams per mile. Note that the appropriate MT FTP CO<sub>2</sub> input values for fuel economy labels based on testing with E10 test fuel are adjusted as referenced in § 600.208-12(b)(3)(iii).

(ii)

(A) For each model type, determine the derived five-cycle highway fuel economy using the equation below and coefficients determined by the Administrator:

$$\text{Derived 5-cycle Highway Fuel Economy} = \frac{1}{\left( \text{Highway Intercept} + \frac{\text{Highway Slope}}{\text{MT HFET FE}} \right)}$$

Where:

Highway Intercept = Intercept determined by the Administrator based on historic vehicle-specific 5-cycle highway fuel economy data. Highway Slope = Slope determined by the Administrator based on historic vehicle-specific 5-cycle highway fuel economy data. MT HFET FE = the model type highway fuel economy determined under § 600.208-12(b), rounded to the nearest 0.0001 mpg.

(B) For each model type, determine the derived five-cycle highway CO<sub>2</sub> emissions using the equation below and coefficients determined by the Administrator:

$$\text{Derived 5-cycle Highway CO}_2 = \text{Highway Intercept} \cdot A + \text{Highway Slope} \cdot \text{MT HFET CO}_2$$

Where: *Highway Intercept* = Intercept determined by the Administrator based on historic vehicle-specific 5-cycle highway fuel economy data. A = 8,887 for gasoline-fueled vehicles, 10,180 for diesel-fueled vehicles, or an appropriate value specified by the Administrator for other fuels. *Highway Slope* = Slope determined by the Administrator based on historic vehicle-specific 5-cycle highway fuel economy data. *MT HFET CO<sub>2</sub>* = the model type highway CO<sub>2</sub> emissions determined under § 600.208-12(b), rounded to the nearest 0.1 grams per mile. Note that the appropriate the MT HFET CO<sub>2</sub> input values for fuel economy labels based on testing with E10 test fuel are adjusted as referenced in § 600.208-12(b)(3)(iii) and (b)(4).

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