APPENDIX II TO PART 600—SAMPLE FUEL ECONOMY CALCULATIONS

(a) This sample fuel economy calculation is applicable to 1978 through 1987 model year automobiles.

(1) Assume that a gasoline-fueled vehicle was tested by the Federal Emission Test Procedure and the following results were calculated:

\[
\text{MPG}_c = \frac{2421}{(0.866 \times \text{HC}) + (0.429 \times \text{CO}) + (0.273 \times \text{CO}_2)}
\]

\[
\text{MPG}_c = \frac{2421}{(0.866 \times 1.39) + (0.429 \times 1.59) + (0.273 \times 317)}
\]
(2) Assume that the same vehicle was tested by the Federal Highway Fuel Economy Test Procedure and calculation similar to that shown in paragraph (a) by this appendix resulted in a highway fuel economy of \( \text{MPG}_h \) of 36.9. According to the procedure in §600.113, the combined fuel economy (called \( \text{MPG}_{c/h} \)) for the vehicle may be calculated by substituting the city and highway fuel economy values into the following equation:

\[
\text{MPG}_{c/h} = \frac{1}{\frac{0.55}{\text{MPG}_c} + \frac{0.45}{\text{MPG}_h}}
\]

\[
\text{MPG}_{c/h} = \frac{1}{\frac{0.55}{27.7} + \frac{0.45}{36.9}} = 31.2
\]

(b) This sample fuel economy calculation is applicable to 1988 and later model year automobiles.

(1) Assume that a gasoline-fueled vehicle was tested by the Federal Emission Test Procedure and the following results were calculated:

- HC = 0.139 grams/mile.
- CO = 1.59 grams/mile.
- \( \text{CO}_2 = 317 \) grams/mile.

(2) Assume that the test fuel used for this test had the following properties:

- \( \text{SG} = 0.745 \)
- \( \text{CWF} = 0.868 \)
- \( \text{NHV} = 18,478 \) Btu/lb.

(3) According to the procedure in §600.113–08, the city fuel economy or \( \text{MPG}_c \), for the vehicle may be calculated by substituting the HC, CO, and \( \text{CO}_2 \) gram/mile values and the \( \text{SG} \), CWF, and NHV values into the following equation:

\[
\text{MPG}_c = \frac{(5174 \times 10^4 \times \text{CWF} \times \text{SG})}{((\text{CWF} \times \text{HC}) + (0.429 \times \text{CO} + (0.273 \times \text{CO}_2))((0.6 \times \text{SG} \times \text{NHV}) + 5471)}
\]

Example:

\[
\text{MPG}_c = \frac{(5174 \times 10^4 \times 0.868 \times 0.745)}{(0.868 \times 0.139 + 0.429 \times 1.59 + 0.273 \times 317)(0.6 \times 0.745 \times 18478 + 5471)} = 27.9
\]

(4) Assume that the same vehicle was tested by the Federal Highway Fuel Economy Test Procedure and a calculation similar to that shown in (b)(3) of this section resulted in a highway fuel economy of \( \text{MPG}_h \) of 36.9. According to the procedure in §600.210–08(c) or §600.210–12(c), the combined fuel economy (called \( \text{MPG}_{c/h} \)) for the vehicle may be calculated by substituting the city and highway fuel economy values into the following equation:

\[
\text{MPG}_{c/h} = \frac{1}{\frac{0.55}{\text{MPG}_c} + \frac{0.45}{\text{MPG}_h}}
\]

\[
\text{MPG}_{c/h} = \frac{1}{\frac{0.55}{27.9} + \frac{0.45}{36.9}} = 31.3
\]

\[
\text{MPG}_{c/h} = 31.3
\]


APPENDIX III TO PART 600—SAMPLE FUEL ECONOMY LABEL CALCULATION

Suppose that a manufacturer called Mizer Motors has a product line composed of eight car lines. Of these eight, four are available with the 3.0 liter, 6 cylinder, sequential multi-point fuel injection, 4-valve per cylinder, and 3-way catalyst engine. These four car lines are:

- Ajax
- Boredom III
- Dodo
- Castor (Station Wagon)