

**§ 86.088-2**

**40 CFR Ch. I (7-1-04 Edition)**

emissions defect and emissions performance warranty period. The explanation must clearly state that the useful life period specified on the label represents the average period of use up to retirement or rebuild for the engine family represented by the engine used in the vehicle. An explanation of how the actual useful lives of engines used in various applications are expected to differ from the average useful life may be included. The explanation(s) shall be in clear, non-technical language that is understandable to the ultimate purchaser.

(f) If approved by the Administrator, the instructions provided to purchasers under paragraph (a) of this section shall indicate what adjustments or modifications, if any, are necessary to allow the vehicle to meet applicable emission standards at elevations above

4,000 feet, or at elevations of 4,000 feet or less.

(Secs. 202, 203, 206, 207, 208, 301a, Clean Air Act, as amended; 42 U.S.C. 7521, 7522, 7525, 7541, 7542, 7601a)

[50 FR 10693, Mar. 15, 1985, as amended at 51 FR 24610, July 7, 1986]

**§ 86.088-2 Definitions.**

The definitions in § 86.085-2 remain effective. The definitions in this section apply beginning with the 1988 model year.

*Composite NO<sub>x</sub> standard*, for a manufacturer which elects to average light-duty trucks subject to the NO<sub>x</sub> standard of § 86.088-9(a)(iii)(A) together with those subject to the NO<sub>x</sub> standard of § 86.088-9(a)(iii)(B) in the light-duty truck NO<sub>x</sub> averaging program, means that standard calculated according to the following equation and rounded to the nearest one-tenth gram per mile:

$$\frac{[(\text{PROD}_A)(\text{STD}_A) + (\text{PROD}_B)(\text{STD}_B)]}{[(\text{PROD}_A) + (\text{PROD}_B)]} = \text{Manufacturer's Composite NO}_x \text{ Standard,}$$

Where:

PROD<sub>A</sub> = The manufacturer's total light-duty truck production for those engine families subject to the standard of § 86.088-9(a)(iii)(A) and included in the average for a given model year.

STD<sub>A</sub> = The NO<sub>x</sub> standard of § 86.088-9(a)(iii)(A).

PROD<sub>B</sub> = The manufacturer's total light-duty truck production for those engine families subject to the standard of § 86.088-9(a)(iii)(B) and included in the average for a given model year, and

STD<sub>B</sub> = The NO<sub>x</sub> standard of § 86.088-9(a)(iii)(B).

*Critical emission-related components* are those components which are designed primarily for emission control, or whose failure may result in a significant increase in emissions accompanied by no significant impairment (or perhaps even an improvement) in performance, driveability, and/or fuel economy as determined by the Administrator.

*Critical emission-related maintenance* means that maintenance to be per-

formed on critical emission-related components.

*Emission-related maintenance* means that maintenance which does substantially affect emissions or which is likely to affect the emissions deterioration of the vehicle or engine during normal in-use operation, even if the maintenance is performed at some time other than that which is recommended.

*Family NO<sub>x</sub> emission limit* means the NO<sub>x</sub> emission level to which an engine family is certified in the light-duty truck NO<sub>x</sub> averaging program, expressed to one-tenth of a gram per mile accuracy.

*Non-emission-related maintenance* means that maintenance which does not substantially affect emissions and which does not have a lasting effect on the emissions deterioration of the vehicle or engine during normal in-use operation once the maintenance is performed.

*Production-weighted NO<sub>x</sub> average* means the manufacturer's production-weighted average NO<sub>x</sub> emission level,

for certification purposes, of all of its light-duty truck engine families included in the NO<sub>x</sub> averaging program. It is calculated at the end of the model year by multiplying each family NO<sub>x</sub> emission limit by its respective production, summing those terms, and dividing the sum by the total production of the effected families. Those vehicles produced for sale in California or at high altitude shall each be averaged separately from those produced for sale in any other area.

*Production-weighted particulate average* means the manufacturer's production-weighted average particulate emission level, for certification purposes, of all of its diesel engine families included in the particulate averaging program. It is calculated at the end of the model year by multiplying each family particulate emission limit by its respective production, summing those terms, and dividing the sum by the total production of the effected families. Those vehicles produced for sale in California or at high altitude shall each be averaged separately from those produced for sale in any other area.

(Secs. 202, 203, 206, 207, 208, 301a, Clean Air Act, as amended; 42 U.S.C. 7521, 7522, 7525, 7541, 7542, 7601a)

[50 FR 10648, Mar. 15, 1985]

**§ 86.088-10 Emission standards for 1988 and 1989 model year gasoline-fueled heavy-duty engines and vehicles.**

(a)(1) Exhaust emissions from new 1988 and later model year gasoline-fueled heavy-duty engines shall not exceed:

(i) For engines intended for use in all vehicles except as provided in paragraph (a)(3) of this paragraph,

(A) *Hydrocarbons*. 1.1 grams per brake horsepower-hour, as measured under transient operating conditions.

(B) *Carbon monoxide*. (1) 14.4 grams per brake horsepower-hour, as measured under transient operating conditions.

(2) *Gasoline-fueled heavy-duty engines utilizing aftertreatment technology*. 0.50 percent of exhaust gas flow at curb idle.

(C) *Oxides of nitrogen*. 10.6 grams per brake horsepower-hour, as measured under transient operating conditions.

(ii) For engines intended for use only in vehicles with a Gross Vehicle Weight Rating of greater than 14,000 pounds,

(A) *Hydrocarbons*. 1.9 grams per brake horsepower-hour, as measured under transient operating conditions.

(B) *Carbon monoxide*. (1) 37.1 grams per brake horsepower-hour as measured under transient operating conditions.

(2) *Gasoline-fueled heavy-duty engines utilizing aftertreatment technology*. 0.50 percent of exhaust gas flow at curb idle.

(C) *Oxides of nitrogen*. 10.6 grams per brake horsepower-hour, as measured under transient operating conditions.

(2) The standards set forth in paragraph (a)(1) of this section refer to the exhaust emitted over the operating schedule set forth in paragraph (f)(1) of appendix I to this part, and measured and calculated in accordance with the procedures set forth in subparts N or P.

(3)(i) A manufacturer may certify one or more gasoline-fueled heavy-duty engine configurations intended for use in all vehicles to the emission standards set forth in paragraph (a)(1)(ii) of this paragraph: *Provided*, That the total model year sales of such configuration(s) being certified to the emission standards in paragraph (a)(1)(ii) of this section represent no more than 5 percent of total model year sales of all gasoline-fueled heavy-duty engines intended for use in vehicles with a Gross Vehicle Weight Rating of up to 14,000 pounds by the manufacturer.

(ii) The configurations certified to the emission standards of paragraph (a)(1)(ii) of this section under the provisions of paragraph (a)(3)(i) of this section shall still be required to meet the evaporative emission standards set forth in paragraphs (b)(1)(i)(A) and (b)(2)(i) of this section.

(b)(1) Evaporative emissions from 1988 and later model year gasoline-fueled heavy-duty vehicles shall not exceed:

(i) *Hydrocarbons*. (A) For vehicles with a Gross Vehicle Weight Rating of up to 14,000 pounds, 3.0 grams per test.

(B) For vehicles with a Gross Vehicle Weight Rating of greater than 14,000 pounds, 4.0 grams per test.