

**Environmental Protection Agency**

**§ 86.004-9**

hours meter can reasonably be expected to operate properly over the useful life of the engine.

(v) For an individual engine, if the useful life hours limit of 22,000 hours is reached before the engine reaches 10 years or 100,000 miles, the useful life shall become 10 years or 100,000 miles, whichever occurs first, as required under Clean Air Act section 202(d).

(5) As an option for both light-duty trucks under certain conditions and HDE families, an alternative useful life period may be assigned by the Administrator under the provisions of § 86.094-21(f).

*Warranty period*, for purposes of HDE emissions defect warranty and emissions performance warranty, shall be a period of 5 years/50,000 miles, whichever occurs first, for Otto-cycle HDEs and light heavy-duty diesel engines. For all other heavy-duty diesel engines the aforementioned period shall be 5 years/100,000 miles, whichever occurs first. However, in no case may this period be less than the basic mechanical warranty period that the manufacturer provides (with or without additional charge) to the purchaser of the engine. Extended warranties on select parts do not extend the emissions warranty requirements for the entire engine but only for those parts. In cases where responsibility for an extended warranty is shared between the owner and the manufacturer, the emissions warranty shall also be shared in the same manner as specified in the warranty agreement.

[62 FR 54720, Oct. 21, 1997]

**§ 86.004-9 Emission standards for 2004 and later model year light-duty trucks.**

Section 86.004-9 includes text that specifies requirements that differ from § 86.097-9, § 86.099-9, § 86.000-9 or § 86.001-9. Where a paragraph in § 86.097-9, § 86.099-9, § 86.000-9 or § 86.001-9 is identical and applicable to § 86.004-9, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.097-9.” or “[Reserved]. For guidance see § 86.099-9.” or “[Reserved]. For guidance see § 86.000-9.” or “[Reserved]. For guidance see § 86.001-9.”

(a)(1) introductory text through (a)(1)(iii) [Reserved]. For guidance see § 86.097-9.

(a)(1)(iv) through (b)(4) [Reserved]. For guidance see § 86.099-9.

(b)(5) [Reserved]

(b)(6) [Reserved]. For guidance see § 86.001-9.

(c) [Reserved]. For guidance see § 86.097-9.

(d) Refueling emissions from 2004 and later model year gasoline-fueled and methanol-fueled Otto-cycle and petroleum-fueled and methanol-fueled diesel-cycle light-duty trucks shall not exceed the following standards. The standards apply equally to certification and in-use vehicles.

(d)(1) through (d)(2)(ii) [Reserved]. For guidance see § 86.001-9.

(d)(2)(iii) Heavy-duty vehicles certified as light-duty trucks under the provisions of § 86.085-1 shall comply with the provisions of § 86.001-9 (d)(1)(i) and (ii).

(3)(i) All light-duty trucks of a GVWR equal to 6,000 pounds or less (100%) must meet the refueling emission standard.

(ii) A minimum of the percentage shown in table A04-09 of a manufacturer's sales of the applicable model year's gasoline- and methanol-fueled Otto-cycle and petroleum-fueled and methanol-fueled diesel-cycle light-duty trucks of 6,001 to 8,500 pounds GVWR shall be tested under the procedures in subpart B of this part indicated for 2004 and later model years, and shall not exceed the standards described in § 86.001-9 (d)(1). Vehicles certified in accordance with § 86.001-9 (d)(2)(ii), as determined by the provisions of § 86.001-28(g), shall not be counted in the calculation of the percentage of compliance:

TABLE A04-09—IMPLEMENTATION SCHEDULE FOR LIGHT-DUTY TRUCK REFUELING EMISSION TESTING

Model year	Sales percentage
2004 .....	40
2005 .....	80
2006 and subsequent .....	100

(e) [Reserved]. For guidance see § 86.000-9.

(f) [Reserved]

§ 86.004-11

40 CFR Ch. I (7-1-00 Edition)

(g) through (k) [Reserved]. For guidance see § 86.097-9.

[61 FR 54889, Oct. 22, 1996]

**§ 86.004-11 Emission standards for 2004 and later model year diesel heavy-duty engines and vehicles.**

(a)(1) Exhaust emissions from new 2004 and later model year diesel HDEs shall not exceed the following:

(i)(A) Oxides of Nitrogen plus Non-methane Hydrocarbons (NO<sub>x</sub> +NMHC) for engines fueled with either petroleum fuel, natural gas, or liquefied petroleum gas, 2.4 grams per brake horsepower-hour (0.89 gram per megajoule), as measured under transient operating conditions.

(B) Oxides of Nitrogen plus Non-methane Hydrocarbon Equivalent (NO<sub>x</sub>+NMHCE) for engines fueled with methanol, 2.4 grams per brake horsepower-hour (0.89 gram per megajoule), as measured under transient operating conditions.

(C) *Optional standard.* Manufacturers may elect to certify to an Oxides of Nitrogen plus Non-methane Hydrocarbons (or equivalent for methanol-fueled engines) standard of 2.5 grams per brake horsepower-hour (0.93 gram per megajoule), as measured under transient operating conditions, provided that Non-methane Hydrocarbons (or equivalent for methanol-fueled engines) do not exceed 0.5 grams per brake horsepower-hour (0.19 gram per megajoule) NMHC (or NMHCE for methanol-fueled engines), as measured under transient operating conditions.

(D) A manufacturer may elect to include any or all of its diesel HDE families in any or all of the emissions ABT programs for HDEs, within the restrictions described in § 86.004-15 or superseding applicable sections. If the manufacturer elects to include engine families in any of these programs, the NO<sub>x</sub> plus NMHC (or NO<sub>x</sub> plus NMHCE for methanol-fueled engines) FELs may not exceed 4.5 grams per brake horsepower-hour (1.7 grams per megajoule). This ceiling value applies whether credits for the family are derived from averaging, banking, or trading programs. Additionally, families certified to the optional standard contained in paragraph (a)(1)(i)(C) of this section shall not exceed 0.50 grams per brake

horsepower-hour (0.19 gram per megajoule) NMHC (or NMHCE for methanol-fueled engines) through the use of credits.

(E) No later than December 31, 1999, the Administrator shall review the emissions standards set forth in paragraph (a)(1)(i) of this section and determine whether these standards continue to be appropriate under the Act.

(ii) *Carbon monoxide.* (A) 15.5 grams per brake horsepower-hour (5.77 grams per megajoule), as measured under transient operating conditions.

(B) 0.50 percent of exhaust gas flow at curb idle (methanol-, natural gas-, and liquefied petroleum gas-fueled diesel HDEs only).

(iii) *Particulate.* (A) For diesel engines to be used in urban buses, 0.05 gram per brake horsepower-hour (0.019 gram per megajoule) for certification testing and selective enforcement audit testing, and 0.07 gram per brake horsepower-hour (0.026 gram per megajoule) for in-use testing, as measured under transient operating conditions.

(B) For all other diesel engines, 0.10 gram per brake horsepower-hour (0.037 gram per megajoule), as measured under transient operating conditions.

(C) A manufacturer may elect to include any or all of its diesel HDE families in any or all of the particulate ABT programs for HDEs, within the restrictions described in § 86.004-15 or superseding applicable sections. If the manufacturer elects to include engine families in any of these programs, the particulate FEL may not exceed 0.25 gram per brake horsepower-hour (0.093 gram per megajoule).

(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)(2) of appendix I to this part, and measured and calculated in accordance with the procedures set forth in subpart N or P of this part, except as noted in § 86.098-23(c)(2) or superseding sections.

(b)(1) The opacity of smoke emission from new 2004 and later model year diesel HDEs shall not exceed:

(i) 20 percent during the engine acceleration mode.

(ii) 15 percent during the engine lugging mode.