

§ 86.004-9

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, as amended at 65 FR 59945, Oct. 6, 2000; 66 FR 5159, Jan. 18, 2001; 77 FR 34145, June 8, 2012]

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

(a)(1)(iv)-(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)-(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

40 CFR Ch. I (7-1-13 Edition)

(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]

(g)-(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.

This section applies to 2004 and later model year diesel HDEs.

(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_x +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_x+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_x plus NMHC (or NO_x 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) [Reserved]

(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.

(iii) 50 percent during the peaks in either mode.

(2) The standards set forth in paragraph (b)(1) of this section refer to exhaust smoke emissions generated under the conditions set forth in subpart I of this part and measured and calculated in accordance with those procedures.

(3) Evaporative emissions (total of non-oxygenated hydrocarbons plus methanol) from heavy-duty vehicles equipped with methanol-fueled diesel engines shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(i) For vehicles with a Gross Vehicle Weight Rating of up to 14,000 lbs:

(A)(1) For the full three-diurnal test sequence described in §86.1230-96, diurnal plus hot soak measurements: 3.0 grams per test.

(2) For the supplemental two-diurnal test sequence described in §86.1230-96, diurnal plus hot soak measurements: 3.5 grams per test.

(B) Running loss test: 0.05 grams per mile.

(C) Fuel dispensing spitback test: 1.0 gram per test.

(ii) For vehicles with a Gross Vehicle Weight Rating of greater than 14,000 lbs:

(A)(1) For the full three-diurnal test sequence described in §86.1230-96, diurnal plus hot soak measurements: 4.0 grams per test.

(2) For the supplemental two-diurnal test sequence described in §86.1230-96, diurnal plus hot soak measurements: 4.5 grams per test.

(B) Running loss test: 0.05 grams per mile.

(iii)(A) For vehicles with a Gross Vehicle Weight Rating of up to 26,000 lbs, the standards set forth in paragraph (b)(3) of this section refer to a composite sample of evaporative emissions collected under the conditions and measured in accordance with the procedures set forth in subpart M of this part. For certification vehicles only, manufacturers may conduct testing to quantify a level of nonfuel background emissions for an individual test vehicle. Such a demonstration must include a description of the source(s) of emissions and an estimated decay rate. The demonstrated level of nonfuel background emissions may be subtracted from emission test results from certification vehicles if approved in advance by the Administrator.

(B) For vehicles with a Gross Vehicle Weight Rating of greater than 26,000 lbs., the standards set forth in paragraph (b)(3)(ii) of this section refer to the manufacturer's engineering design evaluation using good engineering practice (a statement of which is required in §86.091-23(b)(4)(ii)).

(iv) All fuel vapor generated during in-use operations shall be routed exclusively to the evaporative control system (e.g., either canister or engine purge). The only exception to this requirement shall be for emergencies.

(4) Evaporative emissions from 2004 and later model year heavy-duty vehicles equipped with natural gas-fueled or liquefied petroleum gas-fueled HDEs shall not exceed the following standards. The standards apply equally to certification and in-use vehicles.

(i) For vehicles with a Gross Vehicle Weight Rating of up to 14,000 pounds for the full three-diurnal test sequence

described in §86.1230-96, diurnal plus hot soak measurements: 3.0 grams per test.

(ii) For vehicles with a Gross Vehicle Weight Rating of greater than 14,000 pounds for the full three-diurnal test sequence described in §86.1230-96, diurnal plus hot soak measurements: 4.0 grams per test.

(iii)(A) For vehicles with a Gross Vehicle Weight Rating of up to 26,000 pounds, the standards set forth in paragraph (b)(4) of this section refer to a composite sample of evaporative emissions collected under the conditions set forth in subpart M of this part and measured in accordance with those procedures.

(B) For vehicles with a Gross Vehicle Weight Rating greater than 26,000 pounds, the standards set forth in paragraphs (b)(3)(ii) and (b)(4)(ii) of this section refer to the manufacturer's engineering design evaluation using good engineering practice (a statement of which is required in §86.091-23(b)(4)(ii)).

(c) No crankcase emissions shall be discharged into the ambient atmosphere from any new 2004 or later model year methanol-, natural gas-, or liquefied petroleum gas-fueled diesel, or any naturally-aspirated diesel HDE. For petroleum-fueled engines only, this provision does not apply to engines using turbochargers, pumps, blowers, or superchargers for air induction.

(d) Every manufacturer of new motor vehicle engines subject to the standards prescribed in this section shall, prior to taking any of the actions specified in section 203(a)(1) of the Act, test or cause to be tested motor vehicle engines in accordance with applicable procedures in subpart I or N of this part to ascertain that such test engines meet the requirements of this section.

(e) The standards described in this section do not apply to diesel-fueled medium-duty passenger vehicles (MDPVs) that are subject to regulation under subpart S of this part, except as specified in subpart S of this part. The standards described in this section also do not apply to diesel engines used in such MDPVs, except as specified in the regulations in subpart S of this part.

Environmental Protection Agency

§ 86.004-15

The term “medium-duty passenger vehicle” is defined in § 86.1803.

[62 FR 54721, Oct. 21, 1997, as amended at 65 FR 6848, Feb. 10, 2000; 65 FR 59945, Oct. 6, 2000]

§ 86.004-15 NO_x plus NMHC and particulate averaging, trading, and banking for heavy-duty engines.

(a)(1) Heavy-duty engines eligible for NO_x plus NMHC and particulate averaging, trading and banking programs are described in the applicable emission standards sections in this subpart. All heavy-duty engine families which include any engines labeled for use in clean-fuel vehicles as specified in 40 CFR part 88 are not eligible for these programs. For manufacturers not selecting Options 1 or 2 contained in § 86.005-10(f), the ABT program requirements contained in § 86.000-15 apply for 2004 model year Otto-cycle engines, rather than the provisions contained in this § 86.004-15. Participation in these programs is voluntary.

(2)(i) Engine families with FELs exceeding the applicable standard shall obtain emission credits in a mass amount sufficient to address the shortfall. Credits may be obtained from averaging, trading, or banking, within the averaging set restrictions described in this section.

(ii) Engine families with FELs below the applicable standard will have emission credits available to average, trade, bank or a combination thereof. Credits may not be used for averaging or trading to offset emissions that exceed an FEL. Credits may not be used to remedy an in-use nonconformity determined by a Selective Enforcement Audit or by recall testing. However, credits may be used to allow subsequent production of engines for the family in question if the manufacturer elects to recertify to a higher FEL.

(b) Participation in the NO_x plus NMHC and/or particulate averaging, trading, and banking programs shall be done as follows:

(1) During certification, the manufacturer shall:

(i) Declare its intent to include specific engine families in the averaging, trading and/or banking programs. Separate declarations are required for each

program and for each pollutant (i.e., NO_x plus NMHC, and particulate).

(ii) Declare an FEL for each engine family participating in one or more of these two programs.

(A) The FEL must be to the same level of significant digits as the emission standard (one-tenth of a gram per brake horsepower-hour for NO_x plus NMHC emissions and one-hundredth of a gram per brake horsepower-hour for particulate emissions).

(B) In no case may the FEL exceed the upper limit prescribed in the section concerning the applicable heavy-duty engine NO_x plus NMHC and particulate emission standards.

(iii) Calculate the projected emission credits (positive or negative) based on quarterly production projections for each participating family and for each pollutant, using the applicable equation in paragraph (c) of this section and the applicable factors for the specific engine family.

(iv)(A) Determine and state the source of the needed credits according to quarterly projected production for engine families requiring credits for certification.

(B) State where the quarterly projected credits will be applied for engine families generating credits.

(C) Credits may be obtained from or applied to only engine families within the same averaging set as described in paragraph (d) or (e) of this section. Credits available for averaging, trading, or banking as defined in § 86.090-2, may be applied exclusively to a given engine family, or reserved as defined in § 86.091-2.

(2) Based on this information each manufacturer's certification application must demonstrate:

(i) That at the end of model year production, each engine family has a net emissions credit balance of zero or more using the methodology in paragraph (c) of this section with any credits obtained from averaging, trading or banking.

(ii) The source of the credits to be used to comply with the emission standard if the FEL exceeds the standard, or where credits will be applied if the FEL is less than the emission standard. In cases where credits are