

§ 86.096-11

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been incorporated by reference (see § 86.1).

(c)-(d) [Reserved]. For guidance see § 86.091-10.

[58 FR 16022, Mar. 24, 1993, as amended at 59 FR 48500, Sept. 21, 1994; 60 FR 43887, Aug. 23, 1995]

**§ 86.096-11 Emission standards for 1996 and later model year diesel heavy-duty engines and vehicles.**

(a) Exhaust emissions from new 1996 and later model year diesel heavy-duty engines shall not exceed the following (optional for 1996 model year gaseous-fueled diesel heavy-duty engines):

(1)(i) *Hydrocarbons (for diesel engines fueled with either petroleum-fuel or liquefied petroleum gas)*. 1.3 grams per brake horsepower-hour (0.48 gram per megajoule), as measured under transient operating conditions.

(ii) *Total Hydrocarbon Equivalent (for methanol-fueled diesel engines)*. 1.3 grams per brake horsepower-hour (0.48 gram per megajoule), as measured under transient operating conditions.

(iii) *Nonmethane hydrocarbons (for natural gas-fueled diesel engines)*. 1.2 grams per brake horsepower-hour (0.45 gram per megajoule), as measured under transient operating conditions.

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

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

(3) *Oxides of Nitrogen*. (i) 5.0 grams per brake horsepower-hour (1.9 grams per megajoule), as measured under transient operating conditions.

(ii) A manufacturer may elect to include any or all of its diesel heavy-duty engine families in any or all of the NO<sub>x</sub> averaging, trading, or banking programs for heavy-duty engines, within the restrictions described in § 86.094-15. If the manufacturer elects to include engine families in any of these programs, the NO<sub>x</sub> FELs may not exceed 6.0 grams per brake horsepower-hour (2.2 grams per megajoule). This ceiling value applies whether credits for the family are derived from averaging, trading or banking programs.

(4) *Particulate*. (i) 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.

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

(iii) A manufacturer may elect to include any or all of its diesel heavy-duty engine families in any or all of the particulate averaging, trading, or banking programs for heavy-duty engines, within the restrictions described in § 86.094-15. If the manufacturer elects to include engine families in any of these programs, the particulate FEL may not exceed:

(A) For engine families intended for use in urban buses, 0.25 gram per brake horsepower-hour (0.093 gram per megajoule).

(B) For engine families not intended for use in urban buses, 0.60 gram per brake horsepower-hour (0.22 gram per megajoule).

(C) The ceiling values in paragraphs (a)(4)(iii) (A) and (B) of this section apply whether credits for the family are derived from averaging, trading or banking programs.

(b)(1) The opacity of smoke emission from new 1996 and later model year diesel heavy-duty engine 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 these procedures.

(3) *Evaporative emissions* (total of non-oxygenated hydrocarbons plus methanol) from 1996 and later model year heavy-duty vehicles equipped with methanol-fueled diesel engines shall not exceed:

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

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

(4) *Evaporative emissions* from 1996 and later model year heavy-duty vehicles equipped with natural gas-fueled or liquefied petroleum gas-fueled heavy-duty engines 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.

(5)(i) For vehicles with a Gross Vehicle Weight Rating of up to 26,000 lbs, the standards set forth in paragraphs (b)(3) and (b)(4) 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.

(ii) 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 1996 or later model year methanol-or gaseous-fueled diesel, or any naturally aspirated diesel heavy-duty engine. For petroleum-

fueled engines only, this provision does not apply to engines using turbochargers, pumps, blowers, or superchargers for air induction. This provision is optional for all 1996 model year gaseous-fueled diesel heavy-duty engines, and for 1997 model year gaseous-fueled diesel heavy-duty 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 paragraphs (a), (b), (c), and (d) of this section.

[58 FR 15799, Mar. 24, 1993, as amended at 59 FR 48500, Sept. 21, 1994; 60 FR 43887, Aug. 23, 1995; 62 FR 47120, Sept. 5, 1997]

### § 86.096-14 Small-volume manufacturer certification procedures.

Section 86.096-14 includes text that specifies requirements that differ from those specified in §§86.094-14 and 86.095-14. Where a paragraph in §86.094-14 or §86.095-14 is identical and applicable to §86.096-14, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see §86.094-14” or “[Reserved]. For guidance see §86.095-14.” Where a corresponding paragraph of §86.094-14 or §86.095-14 is not applicable, this is indicated by the statement “[Reserved].”

(a)-(c)(11)(ii)(B)(15) [Reserved]. For guidance see §86.094-14.

(c)(11)(ii)(B)(16)-(c)(11)(ii)(B)(18) [Reserved]. For guidance see §86.095-14.

(c)(11)(ii)(B)(19) For each light-duty vehicle, light-duty truck, or heavy-duty vehicle evaporative emission family, a description of any unique procedures required to perform evaporative emission tests (including canister working capacity, canister bed volume, and fuel temperature profile for the running loss test) for all vehicles in that evaporative emission family, and a description of the method used to develop those unique procedures.