§ 86.004–11

§ 86.009–9, § 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)–(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 (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 meet the refueling emission standard.

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

(iv) 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 meet the refueling emission standard.

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

(vi) 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 meet the refueling emission standard.

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

<table>
<thead>
<tr>
<th>Model year</th>
<th>Sales percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>40</td>
</tr>
<tr>
<td>2005</td>
<td>80</td>
</tr>
<tr>
<td>2006 and subsequent</td>
<td>100</td>
</tr>
</tbody>
</table>

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

(f) [Reserved]

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

§ 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. 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\textsubscript{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.

(ii) 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 NOx plus NMHC (or NOx 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]

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

(ii) 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.

(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.

(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)).

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

§86.004–15 NO<sub>X</sub> plus NMHC and particulate averaging, trading, and banking for heavy-duty engines.

(a)(1) Heavy-duty engines eligible for NO<sub>X</sub> plus NMHC and particulate averaging, trading, and banking for heavy-duty engines 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