

**Environmental Protection Agency**

**§ 86.709-99**

standards listed in paragraphs (a)(1)(v) (A) and (B) of this section.

- (A) Hydrocarbons: 220 ppm as hexane.
- (B) Carbon monoxide: 1.2 percent.

(2) The standards set forth in paragraphs (a)(1)(i) and (a)(1)(ii) of this section refer to the exhaust emitted over a driving schedule as set forth in subpart B of this part and measured and calculated in accordance with those procedures. The test weight basis for light light-duty trucks, and for heavy light-duty trucks certified to the Tier 0 standards of this section, for the purposes of determining equivalent test weight as prescribed in §86.129-94, shall be loaded vehicle weight. The test weight basis for heavy light-duty trucks certified to the Tier 1 or Tier 1<sub>1</sub> standards of this section, for the purposes of determining equivalent test weight as prescribed in §86.129-94, shall be adjusted loaded vehicle weight. The standard set forth in paragraph (a)(1)(iii) of this section refers to the exhaust emitted at curb idle and measured and calculated in accordance with the procedures set forth in subpart P of this part.

(3) The standards set forth in paragraph (a)(1)(v) of this section refer to the exhaust emitted during the CST as set forth in subpart O of this part and

measured and calculated in accordance with those provisions.

(b) The provision of §86.090-8(b) through (k) of subpart A of this part apply to this section.

[56 FR 25781, June 5, 1991, as amended at 57 FR 31922, July 17, 1992; 58 FR 33211, June 16, 1993; 58 FR 58424, Nov. 1, 1993; 59 FR 48516, Sept. 21, 1994]

**§ 86.709-99 In-use emission standards for 1999 and later model year light-duty trucks.**

Section 86.709-99 includes text that specifies requirements that differ from §86.091-9 of subpart A of this part. Where a paragraph in §86.091-9 is identical and applicable to §86.709-99, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see §86.091-9.” Where a corresponding paragraph of §86.091-9 is not applicable, this is indicated by the statement “[Reserved].”

(a)(1)(i)(A) *Light light-duty trucks.* In-use exhaust emissions from 1999 and later model year light light-duty trucks shall meet all standards in tables H99-1 and H99-2 in the rows designated with the applicable fuel type and loaded vehicle weight.

**TABLE H99-1—INTERMEDIATE USEFUL LIFE<sup>1</sup> STANDARDS (G/MI) FOR LIGHT LIGHT-DUTY TRUCKS**

Fuel	LVW (lbs)	THC	NMHC	THCE	NMHCE	CO	NO <sub>x</sub>	PM
Gasoline	0-3750	.....	0.25	.....	.....	3.4	0.4	0.08
Gasoline	3751-5750	.....	0.32	.....	.....	4.4	0.7	0.08
Diesel	0-3750	.....	0.25	.....	.....	3.4	1.0	0.08
Diesel	3751-5750	.....	0.32	.....	.....	4.4	0.97	0.08
Methanol	0-3750	.....	.....	.....	0.25	3.4	0.4	0.08
Methanol	3751-5750	.....	.....	.....	0.32	4.4	0.7	0.08
Natural Gas	0-3750	.....	0.25	.....	.....	3.4	0.4	0.08
Natural Gas	3751-5750	.....	0.32	.....	.....	4.4	0.7	0.08
LPG	0-3750	.....	0.25	.....	.....	3.4	0.4	0.08
LPG	3751-5750	.....	0.32	.....	.....	4.4	0.7	0.08

<sup>1</sup>The applicable useful life is 5 years or 50,000 miles, whichever first occurs.

**TABLE H99-2—FULL USEFUL LIFE STANDARDS (G/MI) FOR LIGHT LIGHT-DUTY TRUCKS**

Fuel	LVW (lbs)	THC <sup>2</sup>	NMHC <sup>1</sup>	THCE <sup>2</sup>	NMHCE <sup>1</sup>	CO <sup>1</sup>	NO <sub>x</sub> <sup>1</sup>	PM <sup>1</sup>
Gasoline	0-3750	0.80	0.31	.....	.....	4.2	0.6	0.10
Gasoline	3751-5750	0.80	0.40	.....	.....	5.5	0.97	0.10
Diesel	0-3750	0.80	0.31	.....	.....	4.2	1.25	0.10
Diesel	3751-5750	0.80	0.40	.....	.....	5.5	0.97	0.10
Methanol	0-3750	.....	.....	0.80	0.31	4.2	0.6	0.10
Methanol	3751-5750	.....	.....	0.80	0.40	5.5	0.97	0.10
Natural Gas	0-3750	.....	0.31	.....	.....	4.2	0.6	0.10
Natural Gas	3751-5750	.....	0.40	.....	.....	5.5	0.97	0.10
LPG	0-3750	0.80	0.31	.....	.....	4.2	0.6	0.10
LPG	3751-5750	0.80	0.40	.....	.....	5.5	0.97	0.10

<sup>1</sup>The applicable useful life is 10 years or 100,000 miles, whichever first occurs, except that no enforcement testing will be done beyond 7 years or 75,000 miles, whichever first occurs.

<sup>2</sup>The applicable useful life is 11 years or 120,000 miles, whichever first occurs.

(B)(1) Vehicles subject to the standards of paragraph (a)(1)(i)(A) of this section shall be all actual U.S. sales of light light-duty trucks of the applicable model year by a manufacturer.

(2) A manufacturer can not use one set of engine families to meet its in-use intermediate useful life standards and another to meet its in-use full useful life standards. The same families which are used to meet the intermediate use-

ful life standards will be required without deviation to meet the corresponding full useful life standards.

(ii)(A) *Heavy light-duty trucks.* In-use exhaust emissions from 1999 and later model year heavy light-duty trucks shall meet all standards in tables H99-3 and H99-4 in the rows designated with the applicable fuel type and adjusted loaded vehicle weight.

TABLE H99-3—INTERMEDIATE USEFUL LIFE <sup>1</sup> STANDARDS (G/MI) FOR HEAVY LIGHT-DUTY TRUCKS

Fuel	ALVV (lbs)	THC	NMHC	THCE	NMHCE	CO	NO <sub>x</sub>	PM
Gasoline	3751-5750	0.80	0.32	.....	.....	4.4	0.7	0.10
Gasoline	>5750	0.80	0.39	.....	.....	5.0	1.1	0.12
Diesel	3751-5750	0.80	0.32	.....	.....	4.4	0.98	0.10
Diesel	>5750	0.80	0.39	.....	.....	5.0	1.53	0.12
Methanol	3751-5750	.....	.....	0.80	0.32	4.4	0.7	0.10
Methanol	>5750	.....	.....	0.80	0.39	5.0	1.1	0.12
Natural Gas	3751-5750	.....	0.32	.....	.....	4.4	0.7	0.10
Natural Gas	>5750	.....	0.39	.....	.....	5.0	1.1	0.12
LPG	3751-5750	0.80	0.32	.....	.....	4.4	0.7	0.10
LPG	>5750	0.80	0.39	.....	.....	5.0	1.1	0.12

<sup>1</sup>The applicable useful life is 5 years or 50,000 miles, whichever first occurs.

TABLE H99-4—FULL USEFUL LIFE <sup>1</sup> STANDARDS (G/MI) FOR HEAVY LIGHT-DUTY TRUCKS

Fuel	ALVV (lbs)	THC <sup>2</sup>	NMHC <sup>1</sup>	THCE <sup>2</sup>	NMHCE <sup>1</sup>	CO <sup>1</sup>	NO <sub>x</sub> <sup>1</sup>	PM <sup>1</sup>
Gasoline	3751-5750	0.80	0.46	.....	.....	6.4	0.98	0.10
Gasoline	>5750	0.80	0.56	.....	.....	7.3	1.53	0.12
Diesel	3751-5750	0.80	0.46	.....	.....	6.4	0.98	0.10
Diesel	>5750	0.80	0.56	.....	.....	7.3	1.53	0.12
Methanol	3751-5750	.....	.....	0.80	0.46	6.4	0.98	0.10
Methanol	>5750	.....	.....	0.80	0.56	7.3	1.53	0.12
Natural Gas	3751-5750	.....	0.46	.....	.....	6.4	0.98	0.10
Natural Gas	>5750	.....	0.56	.....	.....	7.3	1.53	0.12
LPG	3751-5750	0.80	0.46	.....	.....	6.4	0.98	0.10
LPG	>5750	0.80	0.56	.....	.....	7.3	1.53	0.12

<sup>1</sup>The applicable useful life is 11 years or 120,000 miles, whichever first occurs, except that no enforcement testing will be done beyond 7 years or 90,000 miles, whichever first occurs.

<sup>2</sup>The applicable useful life is 11 years or 120,000 miles, whichever first occurs.

(B)(1) Vehicles subject to the standards of paragraph (a)(1)(ii)(A) of this section shall be all actual U.S. sales of heavy light-duty trucks of the applicable model year by a manufacturer.

(2) A manufacturer can not use one set of engine families to meet its in-use intermediate useful life standards and another to meet its in-use full useful life standards. The same families which are used to meet the intermediate useful life standards will be required without deviation to meet the corresponding full useful life standards.

(iii) Exhaust emissions of carbon monoxide from 1999 and later model

year light-duty trucks shall not exceed 0.50 percent of exhaust gas flow at curb idle at a useful life of 11 years or 120,000 miles, whichever first occurs (for Otto-cycle and methanol-fueled diesel-cycle light-duty trucks only)

(iv) CST emissions from gasoline-fueled Otto-cycle light-duty trucks measured and calculated in accordance with subpart O of this part may not exceed the standards listed in paragraphs (a)(1)(iv) (A) and (B) of this section.

- (A) Hydrocarbons: 220 ppm as hexane.
- (B) Carbon monoxide: 1.2 percent.

## Environmental Protection Agency

## § 86.884-5

(2) The standards set forth in paragraphs (a)(1)(i) and (a)(1)(ii) of this section refer to the exhaust emitted over a driving schedule as set forth in subpart B of this part and measured and calculated in accordance with those procedures. The test weight basis for light light-duty trucks, for the purposes of determining equivalent test weight as prescribed in § 86.129-94, shall be loaded vehicle weight. The test weight basis for heavy light-duty trucks, for the purposes of determining equivalent test weight as prescribed in § 86.129-94, shall be adjusted loaded vehicle weight. The standard set forth in paragraph (a)(1)(iii) of this section refers to the exhaust emitted at curb idle and measured and calculated in accordance with the procedures set forth in subpart P of this part.

(3) The standards set forth in paragraph (a)(1)(iv) of this section refer to the exhaust emitted during the CST as set forth in subpart O of this part and measured and calculated in accordance with those provisions.

(b) The provisions of § 86.097-9(b), (c), and (g) through (k) of subpart A of this part apply to this section.

[56 FR 25781, June 5, 1991, as amended at 57 FR 31922, July 17, 1992; 58 FR 58425, Nov. 1, 1993; 59 FR 48520, Sept. 21, 1994]

### Subpart I—Emission Regulations for New Diesel Heavy-Duty Engines; Smoke Exhaust Test Procedure

AUTHORITY: Secs. 202, 206, 207, 208, 301(a), Clean Air Act; as amended 42 U.S.C. 7521, 7524, 7541, 7542, and 7601.

SOURCE: 48 FR 52203, Nov. 16, 1983, unless otherwise noted.

#### § 86.884-1 General applicability.

The provisions of this subpart are applicable to new petroleum-fueled diesel heavy-duty engines beginning with the 1984 model year, methanol-fueled diesel heavy-duty engines beginning with the 1990 model year and natural gas-fueled and liquefied petroleum gas-fueled diesel heavy-duty engines beginning with the 1997 model year. The provisions of this subpart are optional prior to the 1997 model year for natural gas-fueled

and liquefied petroleum gas-fueled diesel heavy-duty engines.

[59 FR 48521, Sept. 21, 1994]

#### § 86.884-2 Definitions.

The definitions in § 86.084-2 apply to this subpart.

#### § 86.884-3 Abbreviations.

The abbreviations in § 86.078-3 apply to this subpart.

#### § 86.884-4 Section numbering.

The section numbering system set forth in § 86.084-4 applies to this subpart.

[48 FR 52203, Nov. 16, 1983, as amended at 59 FR 48521, Sept. 21, 1994]

#### § 86.884-5 Test procedures.

The procedures described in this and subsequent sections will be the test program to determine the conformity of engines with the standards set forth in § 86.084-11(b).

(a) The test consists of a prescribed sequence of engine operating conditions on an engine dynamometer with continuous examination of the exhaust gases. The test is applicable equally to controlled engines equipped with means for preventing, controlling, or eliminating smoke emissions and to uncontrolled engines.

(b) The test is designed to determine the opacity of smoke in exhaust emissions during those engine operating conditions which tend to promote smoke from diesel vehicles.

(c) The test procedure begins with a preconditioned engine which is then run through preloading and preconditioning operations. After an idling period, the engine is operated through acceleration and lugging modes during which smoke emission measurements are made to compare with the standards. The engine is then returned to the idle condition and the acceleration and lugging modes are repeated. Three consecutive sequences of acceleration and lugging constitutes the full set of operating conditions for smoke emission measurement.

(d)(1) Except in cases of component malfunction or failure, all emission control systems installed on, or incorporated in, a new motor vehicle engine