or components used to establish exhaust emission deterioration factors for heavy-duty engines.

(i) The manufacturer must select the engines, subsystems, or components to be used to determine exhaust emission deterioration factors for each enginefamily control system combination. Whether engines, subsystems, or components are used, they must be selected so that their emission deterioration characteristics may be expected to represent those of in-use engines, based on good engineering judgment.

(ii) [Reserved]

(d) [Reserved]

(e)(1) [Reserved]

(2) Any manufacturer may request to certify engine families with combined total sales of fewer than 10,000 lightduty vehicles, light-duty trucks, heavy-duty vehicles, and heavy-duty engines utilizing the procedures contained in §86.094-14 for emission data vehicle selection and determination of deterioration factors. The deterioration factors are applied only to entire engine families.

(f) [Reserved]

[58 FR 58417, Nov. 1, 1993, as amended at 75 FR 22979, Apr. 30, 2010; 79 FR 23691, Apr. 28, 2014]

§86.098–2 Definitions.

The definitions of §86.096-2 continue to apply to 1996 and later model year vehicles. The definitions listed in this section apply beginning with the 1998 model year.

Dispensed fuel temperature means the temperature (deg.F or deg.C may be used) of the fuel being dispensed into the tank of the test vehicle during a refueling test.

Evaporative/refueling emission control system means a unique combination within an evaporative/refueling family of canister adsorptive material, purge system configuration, purge strategy, and other parameters determined by the Administrator to affect evaporative and refueling emission control system durability or deterioration factors.

Evaporative/refueling emission family means the basic classification unit of a manufacturers' product line used for the purpose of evaporative and refueling emissions test fleet selection and 40 CFR Ch. I (7–1–14 Edition)

determined in accordance with 86.098-24.

Fixed liquid level gauge means a type of liquid level gauge used on liquefied petroleum gas-fueled vehicles which uses a relatively small positive shutoff valve and is designed to indicate when the liquid level in the fuel tank being filled reaches the proper fill level. The venting of fuel vapor and/or liquid fuel to the atmosphere during the refueling event is generally associated with the use of the fixed liquid level gauge.

Integrated refueling emission control system means a system where vapors resulting from refueling are stored in a common vapor storage unit(s) with other evaporative emissions of the vehicle and are purged through a common purge system.

Non-integrated refueling emission control system means a system where fuel vapors from refueling are stored in a vapor storage unit assigned solely to the function of storing refueling vapors.

Refueling emissions means evaporative emissions that emanate from a motor vehicle fuel tank(s) during a refueling operation.

Refueling emissions canister(s) means any vapor storage unit(s) that is exposed to the vapors generated during refueling.

Resting losses means evaporative emissions that may occur continuously, that are not diurnal emissions, hot soak emissions, refueling emissions, running losses, or spitback emissions.

Useful life means:

(1) For light-duty vehicles, and for light light-duty trucks not subject to the Tier 0 standards of §86.094-9(a), intermediate useful life and/or full useful life. Intermediate useful life is a period of use of 5 years or 50,000 miles, whichever occurs first. Full useful life is a period of use of 10 years or 100,000 miles, whichever occurs first, except as otherwise noted in §86.094-9. The useful life of evaporative and/or refueling emission control systems on the portion of these vehicles subject to the evaporative emission test requirements of §86.130-96, and/or the refueling emission test requirements of §86.151-98, is defined as a period of use of 10 years or 100,000 miles, whichever occurs first.

Environmental Protection Agency

(2) For light light-duty trucks subject to the Tier 0 standards of §86.094-9(a), and for heavy light-duty truck engine families, intermediate and/or full useful life. Intermediate useful life is a period of use of 5 years or 50,000 miles, whichever occurs first. Full useful life is a period of use of 11 years or 120,000 miles, whichever occurs first. The useful life of evaporative emission control systems on the portion of these vehicles subject to the evaporative emission test requirements of §86.130-96 is also defined as a period of 11 years or 120,000 miles, whichever occurs first.

(3) For an Otto-cycle heavy-duty engine family:

(i) For hydrocarbon and carbon monoxide standards, a period of use of 8 years or 110,000 miles, whichever first occurs.

(ii) For the oxides of nitrogen standard, a period of use of 10 years or 110,000 miles, whichever first occurs.

(iii) For the portion of evaporative emission control systems subject to the evaporative emission test requirements of §86.1230-96, a period of use of 10 years or 110,000 miles, whichever occurs first.

(4) For a diesel heavy-duty engine family:

(i) For light heavy-duty diesel engines, for hydrocarbon, carbon monoxide, and particulate standards, a period of use of 8 years or 110,000 miles, whichever first occurs.

(ii) For light heavy-duty diesel engines, for the oxides of nitrogen standard, a period of use of 10 years or 110,000 miles, whichever first occurs.

(iii) For medium heavy-duty diesel engines, for hydrocarbon, carbon monoxide, and particulate standards, a period of use of 8 years or 185,000 miles, whichever first occurs.

(iv) For medium heavy-duty diesel engines, for the oxides of nitrogen standard, a period of use of 10 years or 185,000 miles, whichever first occurs.

(v) For heavy heavy-duty diesel engines, for hydrocarbon, carbon monoxide, and particulate standards, a period of use of 8 years or 290,000 miles, whichever first occurs, except as provided in paragraph (3)(vii) of this definition.

(vi) For heavy heavy-duty diesel engines, for the oxides of nitrogen standard, a period of use of 10 years or 290,000 miles, whichever first occurs.

(vii) For heavy heavy-duty diesel engines used in urban buses, for the particulate standard, a period of use of 10 years or 290,000 miles, whichever first occurs.

[59 FR 16288, Apr. 6, 1994, as amended at 59 FR 48501, Sept. 21, 1994]

§86.098-3 Abbreviations.

(a) The abbreviations in §86.096-3 continue to apply. The abbreviations in this section apply beginning with the 1998 model year.

(b) The abbreviations of this section apply to this subpart, and also to subparts B, E, F, G, K, M, N, and P of this part, and have the following meanings:

T $_{\rm D}{\rm -\!Dispensed}$ fuel temperature ABT—Averaging, banking, and trading HDE—Heavy-duty engine

[62 FR 54716, Oct. 21, 1997]

§86.098-10 Emission standards for 1998 and later model year Ottocycle heavy-duty engines and vehicles.

Section 86.098-10 includes text that specifies requirements that differ from §86.096-10. Where a paragraph in §86.098-10, is identical and applicable to §86.098-10, this may be indicated by specifying the corresponding paragraph and the statement "[Reserved]. For guidance see §86.096-10."

(a)(1) Except as provided for 2003 and 2004 model years in §§ 86.005–10(f) and 86.1816–05, exhaust emissions from new 1998 and later model year Otto-cycle heavy-duty engines shall not exceed:

(i) For Otto-cycle heavy-duty engines fueled with either gasoline or liquefied petroleum gas, and intended for use in all vehicles except as provided in paragraph (a)(3) of this paragraph.

(A) *Hydrocarbons*. 1.1 grams per brake horsepower-hour (0.41 gram per megajoule), as measured under transient operating conditions.

(B) Carbon monoxide. (1) 14.4 grams per brake horsepower-hour (5.36 grams per megajoule), as measured under transient operating conditions.

(2) For Otto-cycle heavy-duty engines fueled with either gasoline or liquefied petroleum gas and utilizing aftertreatment technology: 0.50 percent of exhaust gas flow at curb idle.