

include, or to show that a provision applies to, all light-duty vehicles and all categories of light-duty trucks, i.e. LDT1, LDT2, LDT3 and LDT4.
 LEV—Low Emission Vehicle.
 LPG—Liquefied Petroleum Gas.
 m—Meter(s).
 max.—Maximum.
 MDPV—Medium-duty passenger vehicle.
 mg—Milligram(s).
 mi.—Mile(s).
 min.—Minimum.
 ml—Milliliter(s).
 mm—Millimeter(s).
 mph—Miles per hour.
 mV—Millivolt.
 N₂—Nitrogen.
 NDIR—Nondispersive infrared.
 NLEV—Refers to the National Low Emission Vehicle Program. Regulations governing this program are found at subpart R of this part.
 NMHC—Nonmethane Hydrocarbons.
 NMHCE—Non-Methane Hydrocarbon Equivalent.
 NMOG—Non-methane organic gases.
 NO—nitric oxide.
 No.—Number.
 O₂—Oxygen.
 OEM—Original equipment manufacturer.
 NO₂—Nitrogen dioxide.
 NO_x—Oxides of nitrogen.
 Pb—Lead.
 pct.—Percent.
 PDP—CVS—Positive displacement pump—constant volume sampler.
 ppm—Parts per million by volume.
 PM—Particulate Matter.
 ppm C—Parts per million, carbon.
 psi—Pounds per square inch.
 R—Rankin.
 RAF—Reactivity adjustment factor.
 rpm—Revolutions per minute.
 RVP—Reid vapor pressure.
 s—Second(s).
 SAE—Society of Automotive Engineers.
 SFTP—Supplemental Federal Test Procedure.
 SI—International system of units.
 SULEV—Super Ultra Low Emission Vehicle.
 TD—dispensed fuel temperature.
 THC—Total Hydrocarbons.
 THCE—Total Hydrocarbon Equivalent.
 TLEV—Transitional Low Emission Vehicle.
 UDDS—Urban dynamometer driving schedule.
 ULEV—Ultra Low Emission Vehicle.
 UV—Ultraviolet.
 vs—Versus.
 W—Watt(s).
 WOT—Wide open throttle.
 Wt.—Weight.
 ZEV—Zero Emission Vehicle.

[64 FR 23925, May 4, 1999, as amended at 65 FR 6852, Feb. 10, 2000; 65 FR 59965, Oct. 6, 2000]

§ 86.1805-01 Useful life.

(a) For light-duty vehicles and light-duty trucks, intermediate useful life is a period of use of 5 years or 50,000 miles, whichever occurs first.

(b) Full useful life is as follows:

(1) For light-duty vehicles and light-duty trucks full useful life is a period of use of 10 years or 100,000 miles, which ever occurs first.

(2) For heavy light-duty trucks full useful life is a period of use of 11 years or 120,000 miles, which ever occurs first.

(3) For complete heavy-duty vehicles, the full useful life is a period of use of 11 years or 120,000 miles, which ever occurs first.

(c) Manufacturers may petition the Administrator to provide alternative useful life periods for light-duty trucks or complete heavy-duty vehicles when they believe that the useful life periods are significantly unrepresentative for one or more test groups (either too long or too short). This petition must include the full rationale behind the request together with any supporting data and other evidence. Based on this or other information the Administrator may assign an alternative useful-life period. Any petition should be submitted in a timely manner, to allow adequate time for a thorough evaluation. For light-duty trucks, alternative useful life periods will be granted only for THC, THCE, and idle CO requirements.

[64 FR 23925, May 4, 1999, as amended at 65 FR 59965, Oct. 6, 2000]

§ 86.1805-04 Useful life.

(a) Except as required under paragraph (b) of this section or permitted under paragraphs (d), (e) and (f) of this section, the full useful life for all LDVs, LDT1s and LDT2s is a period of use of 10 years or 120,000 miles, whichever occurs first. For all HLDTs, MDPVs, and complete heavy-duty vehicles full useful life is a period of 11 years or 120,000 miles, whichever occurs first. This full useful life applies to all exhaust, evaporative and refueling emission requirements except for standards which are specified to only be applicable at the time of certification.

(b) Manufacturers may elect to optionally certify a test group to the Tier 2 exhaust emission standards for 150,000 miles to gain additional NO_x credits, as permitted in §86.1860-04(g), or to opt out of intermediate life standards as permitted in §86.1811-04(c). In such cases, useful life is a period of use of 15 years or 150,000 miles, whichever occurs first, for all exhaust, evaporative and refueling emission requirements except for cold CO standards and standards which are applicable only at the time of certification.

(c) Where intermediate useful life exhaust emission standards are applicable, such standards are applicable for five years or 50,000 miles, whichever occurs first.

(d) Where cold CO standards are applicable, the useful life requirement for compliance with the cold CO standard only, is 5 years or 50,000 miles, whichever occurs first.

(e) Where LDVs, LDT1s and LDT2s of the 2003 or earlier model years are certified to Tier 2 exhaust emission standards for purposes of generating early Tier 2 NO_x credits, manufacturers may certify those vehicles to full useful lives of 100,000 miles in lieu of the otherwise required 120,000 mile full useful lives, as provided under §86.1861-04(c)(4).

(f) For interim non-Tier 2 LDV/LLDTs, the useful life requirement for exhaust, evaporative and refueling emissions is 10 years or 100,000 miles, whichever occurs first.

[65 FR 6852, Feb. 10, 2000, as amended at 65 FR 59965, Oct. 6, 2000]

§ 86.1806-01 On-board diagnostics.

(a)(1) Except as provided by paragraph (a)(2) of this section, all light-duty vehicles, light-duty trucks and MDPVs must be equipped with an on-board diagnostic (OBD) system capable of monitoring, for each vehicle's useful life, all emission-related powertrain systems or components. All systems and components required to be monitored by these regulations must be evaluated periodically, but no less frequently than once per Urban Dynamometer Driving Schedule as defined in Appendix I, paragraph (a), of this part, or similar trip as approved by the Administrator.

(2) Diesel fueled chassis-certified MDPVs and engine-certified diesel engines used in MDPVs, are subject to the requirements of this section only if the exhaust emission certification of the applicable test group is being carried across from a California configuration to which California OBD-II requirements are applicable.

(b) *Malfunction descriptions.* The OBD system shall detect and identify malfunctions in all monitored emission-related powertrain systems or components according to the following malfunction definitions as measured and calculated in accordance with test procedures set forth in subpart B of this part, excluding those test procedures described in §86.158-00. Paragraph (b)(1) of this section does not apply to diesel cycle light-duty vehicles or diesel cycle light-duty trucks, except where the catalyst is needed for NMHC control. Paragraphs (b)(2), (b)(3), and (b)(4) of this section do not apply to diesel cycle light-duty vehicles or diesel cycle light-duty trucks.

(1) Catalyst deterioration or malfunction before it results in an increase in NMHC emissions 1.5 times the NMHC standard, as compared to the NMHC emission level measured using a representative 4000 mile catalyst system.

(2) Engine misfire resulting in exhaust emissions exceeding 1.5 times the applicable standard for NMHC, CO or NO_x; and any misfire capable of damaging the catalytic converter.

(3) Oxygen sensor deterioration or malfunction resulting in exhaust emissions exceeding 1.5 times the applicable standard for NMHC, CO or NO_x.

(4) Any vapor leak in the evaporative and/or refueling system (excluding the tubing and connections between the purge valve and the intake manifold) greater than or equal in magnitude to a leak caused by a 0.040 inch diameter orifice; any absence of evaporative purge air flow from the complete evaporative emission control system. On vehicles with fuel tank capacity greater than 25 gallons, the Administrator may, following a request from the manufacturer, revise the size of the orifice to the smallest orifice feasible, based