

average service life is less than the useful life required by paragraph (c)(1) of this section, but more than the minimum useful life (10,000 kilometers or 1,000 hours of engine operation). In determining the actual average service life of vehicles in an engine family, we will consider all available information and analyses. Survey data is allowed but not required to make this showing.

§ 1051.110 What evaporative emission standards must my vehicles meet?

All of your new vehicles must meet the emission standards of this section over their full useful life, as specified in this section. Note that § 1051.245 allows you to use design-based certification instead of generating new emission data.

(a) Beginning with the 2008 model year, permeation emissions from your vehicle's fuel tank(s) may not exceed 1.5 grams per square-meter per day when measured with the test procedures for tank permeation in subpart F of this part. You may use the averaging, banking, and trading provisions of subpart H of this part to show compliance.

(b) Beginning with the 2008 model year, permeation emissions from your vehicle's fuel lines may not exceed 15 grams per square-meter per day when measured with the test procedures for fuel-line permeation in subpart F of this part. Use the inside diameter of the hose to determine the surface area of the hose.

§ 1051.115 What other requirements must my vehicles meet?

Your vehicles must meet the following requirements:

(a) *Closed crankcase.* Design and produce your vehicles so they release no crankcase emissions into the atmosphere throughout their useful life.

(b) *Emission sampling capability.* Produce all your vehicles to allow sampling of exhaust emissions in the field without damaging the vehicle. Show in your application for certification how this can be done in a way that prevents diluting the exhaust sample with ambient air. To do this, you might simply allow for extending the exhaust pipe by 20 cm; you might also install sample

ports in the exhaust (downstream of any aftertreatment devices).

(c) *Adjustable parameters.* If your vehicles have adjustable parameters, they must meet all the requirements of this part for any adjustment in the physically adjustable range. Note that parameters that control the air-fuel ratio may be treated separately under paragraph (d) of this section.

(1) We do not consider an operating parameter adjustable if you permanently seal it or if ordinary tools cannot readily access it.

(2) We may require you to adjust the engine to any specification within the adjustable range during certification testing, production-line testing, selective enforcement auditing, or in-use testing.

(d) *Other adjustments.* This provision applies if an experienced mechanic can change your engine's air-fuel ratio in less than one hour with a few parts whose total cost is under \$50 (in 2001 dollars). Examples include carburetor jets and needles. In the case of carburetor jets and needles, your vehicle must meet all the requirements of this part for any air-fuel ratio within the adjustable range described in paragraph (d)(1) of this section.

(1) In your application for certification, specify the adjustable range of air-fuel ratios you expect to occur in use. You may specify it in terms of engine parts (such as the carburetor jet size and needle configuration as a function of atmospheric conditions).

(2) This adjustable range (specified in paragraph (d)(1) of this section) must include all air-fuel ratios between the lean limit and the rich limit, unless you can show that some air-fuel ratios will not occur in use.

(i) The lean limit is the air-fuel ratio that produces the highest engine power output (averaged over the test cycle).

(ii) The rich limit is the richest of the following air-fuel ratios:

(A) The air-fuel ratio that would result from operating the vehicle as you produce it at the specified test conditions. This paragraph (d)(2)(ii)(A) does not apply if you produce the vehicle with an unjetted carburetor so that the vehicle must be jetted by the dealer or operator.

§ 1051.120

40 CFR Ch. I (7-1-04 Edition)

(B) The air-fuel ratio of the engine when you do durability testing.

(C) The richest air-fuel ratio that you recommend to your customers for the applicable ambient conditions.

(3) If the air-fuel ratio of your vehicle is adjusted primarily by changing the carburetor jet size and/or needle configuration, you may submit your recommended jetting chart instead of the range of air-fuel ratios required by paragraph (d)(1) of this section if the following criteria are met:

(i) Good engineering judgment indicates that vehicle operators would not have an incentive to operate the vehicle with richer air-fuel ratios than recommended.

(ii) The chart is based on use of a fuel that is equivalent to the specified test fuel(s). As an alternative you may submit a chart based on a representative in-use fuel if you also provide instructions for converting the chart to be applicable to the test fuel(s).

(iii) The chart is specified in units that are adequate to make it practical for an operator to keep the vehicle properly jetted during typical use. For example, charts that specify jet sizes based on increments of temperature smaller than 20 °F (11.1 °C) or increments of altitude less than 2000 feet would not meet this criteria. Temperature ranges must overlap by at least 5 °F (2.8 °C).

(iv) You follow the jetting chart for durability testing.

(v) You do not produce your vehicles with jetting richer than the jetting chart recommendation for the intended vehicle use.

(4) We may require you to adjust the engine to any specification within the adjustable range during certification testing, production-line testing, selective enforcement auditing, or in-use testing. If we allow you to submit your recommended jetting chart instead of the range of air-fuel ratios required by paragraph (d)(1) of this section, adjust the engine to the richest specification within the jetting chart for the test conditions, unless we specify a leaner setting. We may not specify a setting leaner than that described in paragraph (d)(2)(i) of this section.

(e) *Prohibited controls.* You may not design your engines with emission-con-

trol devices, systems, or elements of design that cause or contribute to an unreasonable risk to public health, welfare, or safety while operating. For example, this would apply if the engine emits a noxious or toxic substance it would otherwise not emit that contributes to such an unreasonable risk.

(f) *Defeat devices.* You may not equip your vehicles with a defeat device. A defeat device is an auxiliary emission-control device or other control feature that reduces the effectiveness of emission controls under conditions you may reasonably expect the vehicle to encounter during normal operation and use. This does not apply to auxiliary emission-control devices you identify in your certification application if any of the following is true:

(1) The conditions of concern were substantially included in your prescribed duty cycles.

(2) You show your design is necessary to prevent catastrophic vehicle damage or accidents.

(3) The reduced effectiveness applies only to starting the engine.

(g) *Noise standards.* There are no noise standards specified in this part 1051. See 40 CFR Chapter I, Subchapter G, to determine if your vehicle must meet noise emission standards under another part our regulations.

§1051.120 What warranty requirements apply to me?

(a) *General requirements.* You must warrant to the ultimate buyer that the new engine meets two conditions:

(1) It is designed, built, and equipped to conform at the time of sale with the requirements of this part.

(2) It is free from defects in materials and workmanship that may keep it from meeting these requirements.

(b) *Warranty period.* Your emission-related warranty must be valid for at least 50 percent of the vehicle's minimum useful life in kilometers or at least 30 months, whichever comes first. You may offer an emission-related warranty more generous than we require. This warranty may not be shorter than any published or negotiated warranty you offer for the engine or any of its components. If a vehicle has no odometer, base warranty periods in this