

resolving temperature to ± 0.75 °F (0.42 °C).

(f)-(h)(3) [Reserved]. For guidance see § 86.107-96.

(h)(4) *Refueling emission test.* Blowers or fans must have a capacity of 0.8 ± 0.2 cfm per cubic foot of the nominal enclosure volume. Circulated air shall not be aimed directly at the vehicle.

(5) *Spilled fuel mixing blower; refueling emission test.* An explosion-proof blower of 100-200 ft³/min (2.8-5.7 m³/min) capacity is required to enhance mixing of vapors from spilled fuel through the enclosure atmosphere during tests. The discharge from this blower shall be directed toward the region of the enclosure floor where fuel spillage during fueling may occur.

(i) [Reserved]. For guidance see § 86.107-96.

(j) *Refueling equipment.* The refueling equipment shall consist of a fuel delivery system with temperature control equipment, fuel flow safety switch, dispensing pump, hose, nozzle and a meter to measure the dispensed fuel volume. The dispensing nozzle shall be a commercial model, not equipped with vapor recovery hardware. A fuel recirculation system may be utilized to avoid trapping of unheated fuel in the hose. The fuel delivery system must be capable of delivering fuel at 67 ± 1.5 °F (19.4 ± 0.8 °C) and a constant flow rate between 4.2 and 9.8 gal/min (15.9 and 37.1 liter/min) with a tolerance of ± 0.3 gal/min (± 1.1 liter/min) during the refueling emissions measurement phase of the test. The accuracy of the meter for measuring the dispensed fuel volume shall be ± 2 percent at the test flow rate.

[59 FR 16295, Apr. 6, 1994, as amended at 60 FR 43890, Aug. 23, 1995]

§ 86.108-00 Dynamometer.

(a) The dynamometer shall simulate the road load force and inertia specified for the vehicle being tested, and shall determine the distance traveled during each phase of the test procedure.

(b) Two types of dynamometer roll configurations are currently approved by the Administrator:

(1) A small twin-roll dynamometer that has a nominal roll diameter of 8.65

inches and a nominal roll spacing of 17 inches; and

(2)(i) An electric dynamometer that has a single roll with a nominal diameter of 48 inches (1.20 to 1.25 meters).

(ii)(A) The dynamometer must be capable of dynamically controlling inertia load during the US06 test cycle as a function of a vehicle throttle position signal if a manufacturer desires using the following test option. Any time the duration of throttle operation greater than or equal to 85% of wide open throttle (WOT) is greater than or equal to eight seconds, the test inertia load may be adjusted during any of five EPA specified acceleration events by an amount of load that will eliminate additional throttle operation greater than or equal to 85% of WOT.

(B)(1) The specific US06 schedule accelerations time periods where inertia load adjustments may be applied are:

- (i) 49 through 69 seconds;
- (ii) 83 through 97 seconds;
- (iii) 135 through 165 seconds;
- (iv) 315 through 335 seconds; and
- (v) 568 through 583 seconds.

(2) During these five time intervals when inertia load adjustment is occurring, inertia load adjustment is discontinued when throttle operation is less than 85% of WOT or at the end of the specified time interval.

(C) Each type of generic application for implementing this concept must receive the Administrator's approval before a manufacturer may use these inertia adjustments for official US06 schedule certification tests.

(c) Other dynamometer configurations may be used for testing if it can be demonstrated that the simulated road load power and inertia are equivalent, and if approved in advance by the Administrator.

(d) An electric dynamometer meeting the requirements of paragraph (b)(2) of this section, or a dynamometer approved as equivalent under paragraph (c) of this section, must be used for all types of emission testing in the following situations.

(1)(i) Gasoline vehicles which are part of an engine family which is designated to meet the phase-in of SFTP compliance required under the implementation schedule of table A00-1 of

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§ 86.000-08, or table A00-3, or table A00-5 of § 86.000-09.

(ii) Diesel LDVs and LDTs which are part of an engine family which is designated to meet the phase-in of SFTP compliance required under the implementation schedule of table A00-1 of § 86.000-08, or table A00-3, or table A00-5 of § 86.000-09.

(2) Starting with the 2002 model year, any light-duty vehicle or light light-duty truck which uses any regulated fuel.

(3) Starting with the 2004 model year, any heavy light-duty truck which uses any regulated fuel.

[61 FR 54890, Oct. 22, 1996]

§ 86.109-94 Exhaust gas sampling system; Otto-cycle vehicles not requiring particulate emission measurements.

(a)(1) *General.* The exhaust gas sampling system described in this paragraph is designed to measure the true mass of gaseous emissions in the exhaust of either Otto-cycle light-duty vehicles or light-duty trucks which are waived from requirements for the measurement of particulate emissions. In the CVS concept of measuring mass emissions, two conditions must be satisfied: the total volume of the mixture of exhaust and dilution air must be measured, and a continuously proportioned volume of sample must be collected for analysis. Mass emissions are determined from the sample concentration and total flow over the test period.

(2) *Vehicle tailpipe to CVS Duct.* For methanol-fueled vehicles, cooling of the exhaust gases in the duct connecting the vehicle tailpipe to the CVS shall be minimized. This may be accomplished by:

(i) Using a duct of unrestricted length maintained at a temperature above the maximum dew point of the exhaust, but below 250 °F (121 °C); heat-

ing and possibly cooling capabilities are required; or

(ii) Using a short duct (up to 12 feet long) constructed of smooth wall pipe with a minimum of flexible sections, maintained at a temperature above the maximum dew point of the exhaust, but below 250 °F (121 °C), prior to the test and during the 10 minute hot soak segment and uninsulated during the test (insulation may remain in place and/or heating may occur during testing provided maximum temperature is not exceeded); or

(iii) Using smooth wall duct less than five feet long with no required heating. A maximum of two short flexible connectors are allowed under this option; or

(iv) Omitting the duct and performing the exhaust gas dilution function at the vehicle tailpipe exit.

(3) *Positive displacement pump.* The Positive Displacement Pump-Constant Volume Sampler (PDP-CVS), Figure B94-1 satisfies the first condition by metering at a constant temperature and pressure through the pump. The total volume is measured by counting the revolutions made by the calibrated positive displacement pump. The proportional samples for the bag sample, and for methanol-fueled vehicles, the methanol sample (Figure B94-2) and the formaldehyde sample (Figure B94-3), are achieved by sampling at a constant flow rate. For methanol-fueled vehicles, the sample lines for the methanol and formaldehyde samples are heated to prevent condensation. The temperature of the sample lines shall be more than 5 °F (3 °C) above the maximum dew point of the sample, but below 250 °F (121 °C). (Note: For 1990 through 1994 model year methanol-fueled vehicles, methanol and formaldehyde sampling may be omitted provided the bag sample (hydrocarbons and methanol) is analyzed using a HFID calibrated with methanol.)