

both gasoline and another fuel (for example, “flexible-fuel” or “dual-fuel” light-duty vehicles and light-duty trucks). For the purposes of the Certification Short Test, flexible-fuel or dual-fuel vehicles will be treated as dedicated gasoline vehicles. This subpart applies to 1996 and later model years.

(b) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of subpart S of this part.

[64 FR 23922, May 4, 1999]

**§ 86.1402 Definitions.**

The definitions in § 86.096-2 apply to this subpart.

**§ 86.1403 Abbreviations.**

The abbreviations in § 86.096-3 apply to this subpart.

**§ 86.1404 [Reserved]**

**§ 86.1405 Introduction; structure of subpart.**

(a) This subpart describes equipment and the procedures required to perform the CST on gasoline-fueled Otto-cycle light-duty vehicles and gasoline-fueled Otto-cycle light-duty trucks (including those certified to operate using both gasoline and another fuel). Subpart A of this part sets forth the testing requirements, reporting requirements and test intervals necessary to comply with EPA certification procedures, subpart G of this part sets forth the requirements for Selective Enforcement Auditing of light-duty vehicles, subpart H of this part sets forth the standards for in-use testing, subpart K of this part sets forth the requirements for Selective Enforcement Auditing of light-duty trucks, and part 85, subpart W of this chapter sets forth the testing requirements for inspection and maintenance testing (which also may be utilized as part of the CST as defined in this subpart).

(b) Three topics are addressed in this subpart. Sections 86.1406 through 86.1413 set forth specifications and equipment requirements; §§ 86.1416 through 86.1426 discuss calibration

methods and frequency; and test procedures and data requirements are described in §§ 86.1427 through 86.1442.

**§ 86.1406 Equipment required and specifications; overview.**

(a) *Exhaust emission tests.* All vehicles subject to this subpart are tested for exhaust emissions.

(1) *Dynamometer.* (i) When a CST employs steady state loaded operation, the dynamometer must be adjusted to the lowest available inertia weight setting and must meet the load speed relationships described in § 86.1439(d). When a CST employs transient loaded warmup operation or loaded preconditioning, the dynamometer must be adjusted to the power absorption unit and inertia weight settings as described in § 86.129 of this part.

(ii) All other requirements of this paragraph are set forth in §§ 85.2230 and 85.2233 of this chapter.

(2) *Exhaust gas analysis system.* (i) The requirements for the exhaust gas analysis system are set forth in §§ 85.2225 and 85.2233 of this chapter, except that the NO channel is optional. For the purposes of the CST, non-dispersive infrared analyzers are specified for measuring emissions.

(ii) If desired, the line extending between the sample probe and the analyzer may be insulated to minimize condensation.

(b) *Fuel and analytical tests.* Fuel requirements for the CST are specified in §§ 86.113, 86.213, and 86.1413.

[58 FR 58426, Nov. 1, 1993; 59 FR 33913, July 1, 1994]

**§§ 86.1407-86.1412 [Reserved]**

**§ 86.1413 Fuel specifications.**

(a) The test fuel to be used for the CST test options described in tables O-96-1 and O-96-2 of § 86.1430(b) must conform to the specifications listed in paragraph (b) of this section except that for manufacturer data submittal testing for the purposes of obtaining a certificate of conformity and for Selective Enforcement Audit testing, the octane specification of the fuels does not apply. For all gasoline-fueled Otto-cycle light-duty vehicles and gasoline-fueled Otto-cycle light-duty trucks (including those certified to operate using

**§§ 86.1414–86.1415**

both gasoline fuel and another fuel), CST procedures performed for the purpose of obtaining a certificate of conformity must be conducted using the appropriate gasoline fuel only, as indicated in paragraph (b) of this section.

(b) *CST test fuels by option.* (1) Test Option 1: Use Cold CO fuel as specified in the table in §86.213–94.

(2) Test Option 2: Use Cold CO fuel, as specified in the table in §86.213–94; optionally, the Administrator may substitute Otto-cycle test fuel, as described in §86.113–94(a)(1).

(3) Test Option 3: Use Otto-cycle test fuel as specified in the table in §86.113–94(a)(1).

**§§ 86.1414–86.1415 [Reserved]**

**§86.1416 Calibration; frequency and overview.**

(a) Calibrations are performed as specified in §85.2233 of this chapter, with the exception that the calibrations performed at 72 hour intervals in §85.2233(e) of this chapter are instead performed prior to each CST.

(b) At least monthly, or after any maintenance which could alter calibration, the calibration of the analyzer must be checked. The analyzer must be adjusted or repaired as necessary.

(c) Water traps, filters, and conditioning columns must be checked before each test, and adjusted, repaired or replaced as necessary.

(d) Other equipment used for testing must be calibrated as often as necessary in accordance with good engineering practice.

**§§ 86.1417–86.1421 [Reserved]**

**§86.1422 Analyzer calibration.**

(a) Determine that the analyzer has met the acceptance criteria specified in §85.2225 of this chapter.

(b) *Initial and periodic check.* Prior to its introduction into service and at specified periods thereafter, the analyzer must receive calibration in accordance with §85.2233 of this chapter and with good engineering practice.

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**§§ 86.1423–86.1426 [Reserved]**

**§86.1427 Certification Short Test procedure; overview.**

(a) The test procedure described in this subpart is designed to measure raw concentrations of CO (percent) and HC (parts per million) in the exhaust flow under conditions and test modes that may be encountered in the conduct of the Emission Control System Performance Warranty Short Tests, described in part 85, subpart W of this chapter. Emission sampling may occur during idle, 2500 rpm, and loaded modes. Specific conditions defined by this test procedure include fuel characteristics, ambient temperature, and waiting periods prior to being tested.

(b) *Testing by the manufacturer for certification data submittal.* (1) The options provided for testing under this subpart include a cold temperature test with Cold CO fuel, a moderate temperature test with Cold CO fuel, and a warm temperature test with FTP Otto-cycle test fuel, as described in table O–96–1 of §86.1430. The manufacturer must complete testing for the data submittal (as required by the provisions of §86.096–23(c)) under a minimum of one of these scenarios.

(2) In addition to testing under one of the sets of conditions specified in this subpart, the manufacturer may optionally test under conditions outside the ranges specified in this subpart.

(c) *Testing by the Administrator.* The Administrator reserves the right to conduct testing in accordance with the test procedures described in §86.1439, under test conditions within the ranges specified in this subpart. The options provided for testing under this subpart include a cold temperature test with Cold CO fuel, a moderate temperature test with Cold CO fuel, a moderate temperature test with Otto-cycle test fuel, and a warm temperature test with Otto-cycle test fuel, as described in table O–96–2 of §86.1430. In order for an engine family to be eligible for certification, each of its test vehicles that is subjected to one or more CSTs must obtain a passing result for each combination of fuel, temperature, and test procedure employed in those CSTs, subject to the Administrator's discretion.