

**§ 86.202–94**

**40 CFR Ch. I (7–1–10 Edition)**

**§ 86.202–94 Definitions.**

The definitions in subpart A of this part apply to this subpart.

**§ 86.203–94 Abbreviations.**

The abbreviations in subpart A of this part apply to this subpart.

**§ 86.204–94 Section numbering; construction.**

(a) In the section number, the two digits following the hyphen designate the first model year for which a section is effective. A section remains effective until superseded.

(b) *Example.* Section 86.204–94 applies to the 1994 and subsequent model years until superseded. If a § 86.204–96 is promulgated it would take effect beginning with the 1996 model year; § 86.204–94 would apply to model years 1994 through 1995.

**§ 86.205–11 Introduction; structure of this subpart.**

(a) This subpart describes the equipment required and the procedures to follow in order to perform gaseous exhaust emission tests on gasoline-fueled and petroleum-fueled diesel cycle (where applicable under part 600 of this chapter) light-duty vehicles and light-duty trucks. Subpart A of this part sets forth testing requirements and test intervals necessary to comply with EPA certification procedures.

(b) A section reference without a model year suffix refers to the section applicable for the appropriate model years.

(c) Three topics are addressed in this subpart. Sections 86.206 through 86.215 set forth specifications and equipment requirements; §§ 86.216 through 86.226 discuss calibration methods and frequency; test procedures and data requirements are listed (in approximate order of performance) in §§ 86.227 through 86.245.

[71 FR 77922, Dec. 27, 2006]

**§ 86.205–94 Introduction; structure of this subpart.**

(a) This subpart describes the equipment required and the procedures to follow in order to perform gaseous exhaust emission tests on gasoline-fueled light-duty vehicles and light-duty

trucks. Subpart A of this part sets forth testing requirements and test intervals necessary to comply with EPA certification procedures.

(b) A section reference without a model year suffix refers to the section applicable for the appropriate model years.

(c) Three topics are addressed in this subpart. Sections 86.206 through 86.215 set forth specifications and equipment requirements; §§ 86.216 through 86.226 discuss calibration methods and frequency; test procedures and data requirements are listed (in approximate order of performance) in §§ 86.227 through 86.245.

**§ 86.206–11 Equipment required; overview.**

This subpart contains procedures for exhaust emission tests on gasoline-fueled and petroleum-fueled diesel cycle (where applicable under part 600 of this chapter) light-duty vehicles and light-duty trucks. Equipment required and specifications are as follows:

(a) *Exhaust emission tests.* Exhaust from gasoline-fueled and petroleum-fueled diesel cycle (where applicable under part 600 of this chapter) vehicles is tested for gaseous emissions using the Constant Volume Sampler (CVS) concept (§ 86.209). Equipment necessary and specifications appear in §§ 86.208 through 86.214.

(b) *Fuel, analytical gas, and driving schedule specifications.* Fuel specifications for exhaust emission testing for gasoline-fueled and petroleum-fueled diesel cycle vehicles are specified in § 86.213. Analytical gases are specified in § 86.214. The EPA Urban Dynamometer Driving Schedule (UDDS) for use in gasoline-fueled emission tests is specified in § 86.115 and appendix I to this part.

[71 FR 77922, Dec. 27, 2006]

**§ 86.206–94 Equipment required; overview.**

This subpart contains procedures for exhaust emission tests on gasoline-fueled light-duty vehicles and light-duty trucks. Equipment required and specifications are as follows:

(a) *Exhaust emission tests.* Exhaust from gasoline-fueled vehicles is tested

for gaseous emissions using the Constant Volume Sampler (CVS) concept (§ 86.209). Equipment necessary and specifications appear in §§ 86.208 through 86.214.

(b) *Fuel, analytical gas, and driving schedule specifications.* Fuel specifications for exhaust emission testing for gasoline-fueled vehicles are specified in § 86.213. Analytical gases are specified in § 86.214. The EPA Urban Dynamometer Driving Schedule (UDDS) for use in gasoline-fueled emission tests is specified in § 86.215 and appendix I to this part.

**§ 86.207-94 [Reserved]**

**§ 86.208-94 Dynamometer.**

(a) For testing that is conducted by the Administrator, the dynamometer shall have a single roll with a nominal diameter of 48 inches (1.22 meters), an electrical power absorption unit for simulation of road load power, flywheels or other means for simulating the inertia weight as specified in § 86.229, and a roll or shaft revolution counter or other means for determining distance driven.

(b) For certification testing that is conducted by the manufacturer, a dynamometer with different characteristics may be used provided cold CO emissions are not decreased.

**§ 86.209-94 Exhaust gas sampling system; gasoline-fueled vehicles.**

The provisions of § 86.109-90 apply to this subpart.

**§ 86.210-08 Exhaust gas sampling system; Diesel-cycle vehicles not requiring particulate emissions measurements.**

(a) *General applicability.* The exhaust gas sampling system requirements of § 86.109-94 (which apply to Otto-cycle vehicles), also apply to diesel vehicles that are not required to undergo particulate measurement as allowed under § 600.111-08(e) of this chapter, except that heated flame ionization detector (HFID), probe, sample lines and filters are required as described as follows:

(1) Petroleum-fueled diesel-cycle vehicles require a heated flame ionization detector (HFID) ( $375 \pm 20$  °F ( $191 \pm 11$  °C)) sample for total hydrocarbon (THC) analysis. The HFID sample must

be taken directly from the diluted exhaust stream through a heated probe and continuously integrated measurement of diluted THC is required. Unless compensation for varying mass flow is made, a constant mass flow system must be used to ensure a proportional THC measurement.

(2) For natural gas-fueled and liquefied petroleum gas-fueled diesel vehicles either a heated flame ionization detector (HFID) [ $375 \pm 20$  °F ( $191 \pm 11$  °C)] or a non-heated flame ionization detector may be used for hydrocarbon analysis.

(3) Other sampling systems may be used if shown to yield equivalent or superior results and if approved in advance by the Administrator.

(b) *Component description.* The components necessary for petroleum-fueled diesel vehicle exhaust sampling shall meet the following requirements:

(1) The PDP system shall conform to all of the requirements listed for the exhaust gas PDP-CVS (§ 86.109-94(a)(3)).

(2) The CFV-CVS sample system shall conform to all of the requirements listed for the exhaust gas EFC sample system (§ 86.109-94(a)(5)).

(3) The THC probe (when the THC probe is required) shall be:

(i) Installed at a point where the dilution air and exhaust are well mixed.

(ii) Heated and insulated over the entire length to maintain a  $375 \pm 20$  °F ( $191 \pm 11$  °C) wall temperature.

(iii) 0.19 in. (0.48 cm) minimum inside diameter.

(4) It is intended that the THC probe be free from cold spots (i.e., free from spots where the probe wall temperature is less than 355 °F). This will be determined by a temperature sensor located on a section of the probe wall outside of the walls of the sampling system. The temperature sensor shall be insulated from any heating elements on the probe. The sensor shall have an accuracy and precision of  $\pm 2$  °F (1.1 °C).

(5) The dilute exhaust gas flowing in the THC sample system shall be:

(i) At  $375 \pm 10$  °F ( $191 \pm 6$  °C) immediately before the heated filter. This will be determined by a temperature sensor located immediately upstream of the filter. The sensor shall have an accuracy and precision of  $\pm 2$  °F (1.1 °C).