

**§ 86.125-94 Methane analyzer calibration.**

Prior to introduction into service and monthly thereafter, the methane analyzer shall be calibrated:

(a) Follow the manufacturer's instructions for instrument startup and operation. Adjust the analyzer to optimize performance.

(b) Zero the methane analyzer with zero-grade air.

(c) Calibrate on each normally used operating range with CH<sub>4</sub> in air with nominal concentrations of 15, 30, 45, 60, 75, and 90 percent of that range. Additional calibration points may be generated. For each range calibrated, if the deviation from a least-squares best-fit straight line is 2 percent or less of the value at each data point, concentration values may be calculated by use of a single calibration factor for that range. If the deviation exceeds 2 percent at any point, the best-fit non-linear equation which represents the data to within 2 percent of each test point shall be used to determine concentration.

[56 FR 25774, June 5, 1991]

**§ 86.126-90 Calibration of other equipment.**

Other test equipment used for testing shall be calibrated as often as required by the manufacturer or as necessary according to good practice. Specific equipment requiring calibration are the gas chromatograph and flame ionization detector used in measuring methanol and the high pressure liquid chromatograph (HPLC) and ultraviolet detector for measuring formaldehyde.

[54 FR 14527, Apr. 11, 1989]

**§ 86.127-00 Test procedures; overview.**

*Applicability.* The procedures described in this and subsequent sections are used to determine the conformity of vehicles with the standards set forth in subpart A or S of this part (as applicable) for light-duty vehicles and light-duty trucks. Except where noted, the procedures of paragraphs (a) through (b) of this section, § 86.127-96 (c) and (d), and the contents of §§ 86.135-94, 86.136-90, 86.137-96, 86.140-94, 86.142-90, and 86.144-94 are applicable for determining emission results for vehicle exhaust

emission systems designed to comply with the FTP emission standards, or the FTP emission element required for determining compliance with composite SFTP standards. Paragraphs (f) and (g) of this section discuss the additional test elements of aggressive driving (US06) and air conditioning (SC03) that comprise the exhaust emission components of the SFTP. Section 86.127-96(e) discusses fuel spitback emissions and paragraphs (h) and (i) of this section are applicable to all vehicle emission test procedures. Section 86.127-00 includes text that specifies requirements that differ from § 86.127-96. Where a paragraph in § 86.127-96 is identical and applicable to § 86.127-00, this may be indicated by specifying the corresponding paragraph and the statement "[Reserved]. For guidance see § 86.127-96."

(a) The overall test consists of prescribed sequences of fueling, parking, and operating test conditions. Vehicles are tested for any or all of the following emissions:

(1) Gaseous exhaust THC, CO, NO<sub>x</sub>, CO<sub>2</sub> (for petroleum-fueled and gaseous-fueled vehicles), plus CH<sub>3</sub>OH and HCHO for methanol-fueled vehicles, plus CH<sub>4</sub> (for vehicles subject to the NMHC and NMHCE standards).

(2) Particulates.

(3) Evaporative HC (for gasoline-fueled, methanol-fueled and gaseous-fueled vehicles) and CH<sub>3</sub>OH (for methanol-fueled vehicles). The evaporative testing portion of the procedure occurs after the exhaust emission test; however, exhaust emissions need not be sampled to complete a test for evaporative emissions.

(4) Fuel spitback (this test is not required for gaseous-fueled vehicles).

(b) The FTP Otto-cycle exhaust emission test is designed to determine gaseous THC, CO, CO<sub>2</sub>, CH<sub>4</sub>, NO<sub>x</sub>, and particulate mass emissions from gasoline-fueled, methanol-fueled and gaseous-fueled Otto-cycle vehicles as well as methanol and formaldehyde from methanol-fueled Otto-cycle vehicles, while simulating an average trip in an urban area of 11 miles (18 kilometers). The test consists of engine start-ups and vehicle operation on a chassis dynamometer through a specified driving schedule (see paragraph (a), EPA Urban