1 in milligrams per mile, as determined in paragraph (c)(3) of this section.

(10) Nonexhaust benzene emissions in VOC Control Region 2 shall be given by the following equations for both Phase I and Phase II:

$$NEBZ2 = DIBZ2 + HSBZ2 + RLBZ2 + RFBZ2$$

$$HSBZ2 = 10 \times BEN \times VOCHS2 \times [(-0.0342 \times MTB) + (-0.080274 \times RVP) + 1.4448]$$

$$DIBZ2 = 10 \times BEN \times VOCD12 \times [(-0.0290 \times MTB) + (-0.080274 \times RVP) + 1.3758]$$

$$RLBZ2 = 10 \times BEN \times VOCRL2 \times [(-0.0342 \times MTB) + (-0.080274 \times RVP) + 1.4448]$$

$$RFBZ2 = 10 \times BEN \times VOCRF2 \times [(-0.0296 \times MTB) + (-0.081507 \times RVP) + 1.3972$$

where

NEBZ2 = Nonexhaust emissions of volatile organic compounds in VOC Control Region 2 in milligrams per mile.

DIBZ2 = Diurnal emissions of volatile organic compounds in VOC Control Region 2 in milligrams per mile.

HSBZ2 = Hot soak emissions of volatile organic compounds in VOC Control Region 2 in milligrams per mile.

RLBZ2 = Running loss emissions of volatile organic compounds in VOC Control Region 2 in milligrams per mile.

RFBZ2 = Refueling emissions of volatile organic compounds in VOC Control Region 2 in grams per mile.

VOCDI2 = Diurnal emissions of volatile organic compounds in VOC Control Region 2 in milligrams per mile, as determined in paragraph (c)(4) of this section.

VOCHS2 = Hot soak emissions of volatile organic compounds in VOC Control Region 2 in milligrams per mile, as determined in paragraph (c)(4) of this section.

VOCRL2 = Running loss emissions of volatile organic compounds in VOC Control Region 2 in milligrams per mile, as determined in paragraph (c)(4) of this section.

VOCRF2 = Refueling emissions of volatile organic compounds in VOC Control Region 2 in milligrams per mile, as determined in paragraph (c)(4) of this section.

(f) *Limits of the model.* (1) The equations described in paragraphs (c), (d), and (e) of this section shall be valid only for fuels with fuel properties that fall in the following ranges for reformulated gasolines and conventional gasolines:

(i) For reformulated gasolines:

Fuel property	Acceptable range
Oxygen	0.0–5.8 weight percent.
Sulfur	0.0–500.0 parts per million by weight.
RVP	6.4–10.0 pounds per square inch.
E200	30.0–70.0 percent evaporated.
E300	70.0–100.0 percent evaporated.
Aromatics	0.0–50.0 volume percent.
Olefins	0.0–25.0 volume percent.
Benzene	0.0–2.0 volume percent.

(ii) For conventional gasoline:

Fuel property	Acceptable range
Oxygen	0.0–5.8 weight percent.
Sulfur	0.0–1000.0 parts per million by weight.
RVP	6.4–11.0 pounds per square inch.
E200	30.0–70.0 evaporated percent.
E300	70.0–100.0 evaporated percent.
Aromatics	0.0–55.0 volume percent.
Olefins	0.0–30.0 volume percent.
Benzene	0.0–4.9 volume percent.

(2) Fuels with one or more properties that do not fall within the ranges described in above shall not be certified or evaluated for their emissions performance using the complex emissions model described in paragraphs (c), (d), and (e) of this section.

[59 FR 7813, Feb. 16, 1994, as amended at 59 FR 36959, July 20, 1994; 62 FR 68206, Dec. 31, 1997; 71 FR 74566, Dec. 15, 2005; 76 FR 44443, July 25, 2011]

§ 80.46 Measurement of reformulated gasoline and conventional gasoline fuel parameters.

(a) *Sulfur.* Sulfur content of gasoline and butane must be determined by use of the following methods:

(1) Through December 31, 2015, the sulfur content of gasoline must be determined by ASTM D2622 or by one of the alternative test methods specified in paragraph (a)(3) of this section. Beginning January 1, 2016, the sulfur content of gasoline must be determined by a test method approved under § 80.47.

(2) Through December 31, 2015, the sulfur content of butane must be determined by ASTM D6667 or by one of the alternative test methods specified in paragraph (a)(4) of this section.

(3) Through December 31, 2015, any refiner or importer may use ASTM D3120, ASTM D5453, ASTM D6920, or ASTM D7039 for determining the sulfur

content of gasoline provided the refiner or importer test result is correlated with the method specified in paragraph (a)(1) of this section:

(4) Beginning January 1, 2016, the sulfur content of butane must be determined by a test method approved under §80.47. Through December 31, 2015, any refiner or importer may determine the sulfur content of butane using ASTM D4468 or ASTM D3246; provided the refiner or importer test result is correlated with the method specified in paragraph (a)(2) of this section.

(b) *Olefins.* Olefin content must be determined by use of the following methods:

(1) Through December 31, 2015, olefin content must be determined using ASTM D1319. Beginning January 1, 2016, the olefin content of gasoline must be determined by a test method approved under §80.47.

(2) Through December 31, 2015, any refiner or importer may determine olefin content using ASTM D6550 for purposes of meeting any testing requirements involving olefin content, provided that the refiner or importer test result is correlated with the method specified in paragraph (b)(1) of this section on a site-specific basis, in order to achieve an unbiased prediction of the result in volume percent, for the method specified in paragraph (b)(1) of this section.

(c) *Reid Vapor Pressure (RVP).* (1) Through December 31, 2015, Reid Vapor Pressure must be determined using ASTM D5191, except the following correction equation must be used:

$$\text{RVP psi} = (0.956 * X) - 0.347$$
$$\text{RVP kPa} = (0.956 * X) - 2.39$$

Where:

X = Total measured vapor pressure, in psi or kPa.

(2) Beginning January 1, 2016, RVP must be determined by a test method approved under §80.47, except as provided in paragraph (c)(2)(i) of this section.

(i) For reporting purposes, the RVP test result computed from §80.47 must continue to utilize the RVP correction equation in paragraph (c)(1) of this section.

(ii) [Reserved]

(d) *Distillation.* Through December 31, 2015, distillation parameters must be determined using ASTM D86. Beginning January 1, 2016, the distillation parameters must be determined by a test method approved under §80.47. (Note: The precision estimates for reproducibility in ASTM D86–12 do not apply; see §80.47(h).)

(e) *Benzene.* Through December 31, 2015, benzene content must be determined using ASTM D3606, except that instrument parameters shall be adjusted to ensure complete resolution of the benzene, ethanol and methanol peaks because ethanol and methanol may cause interference with ASTM D3606 when present. Beginning January 1, 2016, the benzene content must be determined by a test method approved under §80.47.

(f)(1) Through December 31, 2015, aromatic content must be determined using ASTM D5769, except the sample chilling requirements in section 8 of this standard method are optional. Beginning January 1, 2016, the aromatic content must be determined by a test method approved under §80.47.

(2) [Reserved]

(3) Through December 31, 2015, any refiner or importer may determine aromatics content using ASTM D1319 for the purposes of meeting any test requirement involving aromatic content; provided that the refiner or importer test result is correlated with the method specified in paragraph (f)(1) of this section.

(g) *Oxygen and oxygenate content analysis.* (1) Through December 31, 2015, oxygen and oxygenate content must be determined using ASTM D5599. Beginning January 1, 2016, oxygen and oxygenate content must be determined by a test method approved under §80.47.

(2) Through December 31, 2015, when oxygenates present are limited to MTBE, ETBE, TAME, DIPE, tertiary-amyl alcohol and C1 to C4 alcohols, any refiner, importer, or oxygenate blender may determine oxygen and oxygen content using ASTM D4815 for purposes of meeting any testing requirement; provided that the refiner or importer test result is correlated with the method specified in paragraph (g)(1) of this section.

(h) *Materials incorporated by reference.* The published materials identified in this section are incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, a document must be published in the FEDERAL REGISTER and the material must be available to the public. All approved materials are available for inspection at the Air and Radiation Docket and Information Center (Air Docket) in the EPA Docket Center (EPA/DC) at Rm. 3334, EPA West Bldg., 1301 Constitution Ave. NW., Washington, DC. The EPA/DC Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number of the EPA/DC Public Reading Room is (202) 566–1744, and the telephone number for the Air Docket is (202) 566–1742. These approved materials are also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741–6030 or go to *http://www.archives.gov/federal__register/code__of__federal__regulations/ibr__locations.html.* In addition, these materials are available from the sources listed below.

(1) *ASTM International material.* The following standards are available from ASTM International, 100 Barr Harbor Dr., P.O. Box C700, West Conshohocken, PA 19428–2959, (877) 909–ASTM, or *http://www.astm.org:*

(i) ASTM D86–12, Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure, approved December 1, 2012 (''ASTM D86'').

(ii) ASTM D1319–13, Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption, approved May 1, 2013 (''ASTM D1319'').

(iii) ASTM D2622–10, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry, approved February 15, 2010 (''ASTM D2622'').

(iv) ASTM D3120–08, Standard Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry, approved December 15, 2008 (''ASTM D3120'').

(v) ASTM D3246–11, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, approved June 1, 2011 (''ASTM D3246'').

(vi) ASTM D3606–10, Standard Test Method for Determination of Benzene and Toluene in Finished Motor and Aviation Gasoline by Gas Chromatography, approved October 1, 2010 (''ASTM D3606'').

(vii) ASTM D4468–85 (Reapproved 2011), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry, approved November 1, 2011 (''ASTM D4468'').

(viii) ASTM D4815–13, Standard Test Method for Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C1 to C4 Alcohols in Gasoline by Gas Chromatography, approved October 1, 2013 (''ASTM D4815'').

(ix) ASTM D5191–13, Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method), approved December 1, 2013 (''ASTM D5191'').

(x) ASTM D5453–12, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Spark Ignition Engine Fuel, Diesel Engine Fuel, and Engine Oil by Ultraviolet Fluorescence, approved November 1, 2012 (''ASTM D5453'').

(xi) ASTM D5599–00 (Reapproved 2010), Standard Test Method for Determination of Oxygenates in Gasoline by Gas Chromatography and Oxygen Selective Flame Ionization Detection, approved October 1, 2010 (''ASTM D5599'').

(xii) ASTM D5769–10, Standard Test Method for Determination of Benzene, Toluene, and Total Aromatics in Finished Gasolines by Gas Chromatography/Mass Spectrometry, approved May 1, 2010 (''ASTM D5769'').

(xiii) ASTM D6550–10, Standard Test Method for Determination of Olefin Content of Gasolines by Supercritical-Fluid Chromatography, approved October 1, 2010 (''ASTM D6550'').

(xiv) ASTM D6667–10, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, approved October 1, 2010 (''ASTM D6667'').

(xv) ASTM D6920–13, Standard Test Method for Total Sulfur in Naphthas, Distillates, Reformulated Gasolines, Diesels, Biodiesels, and Motor Fuels by Oxidative Combustion and Electrochemical Detection, approved September 15, 2013 (''ASTM D6920'').

(xvi) ASTM D7039–13, Standard Test Method for Sulfur in Gasoline, Diesel Fuel, Jet Fuel, Kerosine, Biodiesel, Biodiesel Blends, and Gasoline-Ethanol Blends by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry, approved September 15, 2013 (''ASTM D7039'').

(2) [Reserved]

[59 FR 7813, Feb. 16, 1994, as amended at 59 FR 36961, July 20, 1994; 61 FR 58306, Nov. 13, 1996; 63 FR 63793, Nov. 17, 1998; 65 FR 6822, Feb. 10, 2000; 65 FR 53189, Sept. 1, 2000; 66 FR 17263, Mar. 29, 2001; 67 FR 8737, Feb. 26, 2002; 67 FR 40181, June 12, 2002; 68 FR 56781, Oct. 2, 2003; 68 FR 57819, Oct. 7, 2003; 71 FR 16499, Apr. 3, 2006; 73 FR 74355, Dec. 8, 2008; 74 FR 6233, Feb. 6, 2009; 76 FR 65385, Oct. 21, 2011; 79 FR 23632, Apr. 28, 2014; 80 FR 9090, Feb. 19, 2015]

§ 80.47 Performance-based Analytical Test Method Approach.

All sample handling, testing procedures, and tests must be conducted using good laboratory practices.

(a) *Definitions.* As used in this subpart D:

(1) *Performance-based Analytical Test Method Approach* means a measurement system based upon established performance criteria for accuracy and precision with use of analytical test methods. As used in this subpart, this is a measurement system used by laboratories to demonstrate that a particular analytical test method is acceptable for demonstrating compliance.

(2) *Accuracy* means the closeness of agreement between an observed value from a single test measurement and an accepted reference value.

(3) *Precision* means the degree of agreement in a set of measurements performed on the same property of identical test material.

(4) *Absolute fuel parameter* means a fuel parameter for which a gravimetric standard is practical to construct and use. Sulfur content of gasoline, butane, or diesel fuel are examples of an absolute fuel parameter.

(5) *Gravimetric standard* means a test material made by adding a carefully weighed quantity of the analyte to a measured quantity of another substance known not to contain any of the analyte, resulting in a solution with an accurately known concentrate of the analyte.

(6) *Consensus named fuels* are homogeneous quantities of fuel that have been analyzed by a number of different laboratories (by sending around small samples). The average concentration of some parameter of interest across all of the different laboratories is then used as the ''consensus name'' for that material.

(7) *Locally-named reference materials* are gasoline or diesel fuels that are usually from the regular production of the facility where they are used in laboratory quality control efforts and have been analyzed using the designated method (either by the facility's lab or by a reference lab) to obtain an estimate of their concentration.

(8) *Method-defined fuel parameter* means a fuel parameter for which an EPA-prescribed primary test method or designated method defines the regulatory standard. Examples of method-defined fuel parameters include olefin content in gasoline, Reid vapor pressure (RVP) of gasoline, distillation parameters of gasoline, benzene content of gasoline, aromatic content of gasoline and diesel fuel, and oxygen/oxygenates content of gasoline.

(9) *Reference installations* are designated test method installations that are used to qualify the accuracy of other method-defined parameter instruments. Reference installations of the designated test method will be used to evaluate the accuracy of other method-defined alternative test methods and to establish correlation equations if necessary.

(10) *Correlation equation* is a correction equation as determined by the use of ASTM D6708. This standard practice determines whether the comparison between the alternative test method and the designated test method is a null result. If the comparison is not null, then the standard practice provides for a correlation equation that predicts designated test method results from the