Designation: D7096 – 16

Standard Test Method for Determination of the Boiling Range Distribution of Gasoline by Wide-Bore Capillary Gas Chromatography[1]

This standard is issued under the fixed designation D7096; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This test method covers the determination of the boiling range distribution of gasoline and liquid gasoline blending components. It is applicable to petroleum products and fractions with a final boiling point of 280 °C (536 °F) or lower, as measured by this test method.

1.2 This test method is designed to measure the entire boiling range of gasoline and gasoline components with either high or low vapor pressure and is commonly referred to as Simulated Distillation (SimDis) by gas chromatographers.

1.3 This test method has been validated for gasoline containing ethanol. Gasolines containing other oxygenates are not specifically excluded, but they were not used in the development of this test method.

1.4 This test method can estimate the concentration of *n*-pentane and lighter saturated hydrocarbons in gasoline.

1.5 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5.1 Results in degrees Fahrenheit can be obtained by simply substituting Fahrenheit boiling points in the calculation of the boiling point-retention time correlation.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D86 Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure

D2421 Practice for Interconversion of Analysis of C_5 and Lighter Hydrocarbons to Gas-Volume, Liquid-Volume, or Mass Basis

D3700 Practice for Obtaining LPG Samples Using a Floating Piston Cylinder

D4057 Practice for Manual Sampling of Petroleum and Petroleum Products

D4307 Practice for Preparation of Liquid Blends for Use as Analytical Standards

D4626 Practice for Calculation of Gas Chromatographic Response Factors

D4814 Specification for Automotive Spark-Ignition Engine Fuel

D4815 Test Method for Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C_1 to C_4 Alcohols in Gasoline by Gas Chromatography

D5191 Test Method for Vapor Pressure of Petroleum Products (Mini Method)

D5599 Test Method for Determination of Oxygenates in Gasoline by Gas Chromatography and Oxygen Selective Flame Ionization Detection

D6300 Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products and Lubricants

E594 Practice for Testing Flame Ionization Detectors Used in Gas or Supercritical Fluid Chromatography

E1510 Practice for Installing Fused Silica Open Tubular Capillary Columns in Gas Chromatographs

3. Terminology

3.1 *Definitions:*

3.1.1 *area slice, n*—area under a chromatogram within a specified retention time interval.

3.1.2 *final boiling point (FBP), n*—the point at which a cumulative volume count equal to 99.5 % of the total volume counts under the chromatogram is obtained.

3.1.3 *initial boiling point (IBP), n*—the point at which a cumulative volume count equal to 0.5 % of the total volume counts under the chromatogram is obtained.

[1] This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.04.0H on Chromatographic Distribution Methods.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

***A Summary of Changes section appears at the end of this standard**

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