



Standard Test Method for Boiling Range Distribution of Petroleum Distillates in Boiling Range from 174 to 700°C by Gas Chromatography¹

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1. Scope*

1.1 This test method covers the determination of the boiling range distribution of petroleum distillate fractions. The test method is applicable to petroleum distillate fractions having an initial boiling point greater than 174°C (345°F) and a final boiling point of less than 700°C (1292°F) (C10 to C90) at atmospheric pressure as measured by this test method.

1.2 The test method is not applicable for the analysis of petroleum or petroleum products containing low molecular weight components (for example naphthas, reformates, gasolines, crude oils). Materials containing heterogeneous components (for example alcohols, ethers, acids, or esters) or residue are not to be analyzed by this test method. See Test Methods D 3710, D 2887, or D 5307 for possible applicability to analysis of these types of materials.

1.3 The values stated in SI units are to be regarded as standard. The values stated in inch-pound units are for information only and may be included as parenthetical values.

1.4 *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

- D 86 Test Method for Distillation of Petroleum Products at Atmospheric Pressure
- D 1160 Test Method for Distillation of Petroleum Products at Reduced Pressure
- D 2887 Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography

¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.04 on Hydrocarbon Analysis.

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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.

D 2892 Test Method for Distillation of Crude Petroleum (15-Theoretical Plate Column)

D 3710 Test Method for Boiling Range Distribution of Gasoline and Gasoline Fractions by Gas Chromatography

D 4626 Practice for Calculation of Gas Chromatographic Response Factors

D 5307 Test Method for Determination of Boiling Range Distributions of Crude Petroleum by Gas Chromatography

E 355 Practice for Gas Chromatography Terms and Relationships

E 594 Practice for Testing Flame Ionization Detectors Used in Gas or Supercritical Fluid Chromatography

E 1510 Practice for Installing Fused Silica Open Tubular Capillary Columns in Gas Chromatographs

3. Terminology

3.1 *Definitions*—This test method makes reference to many common gas chromatographic procedures, terms, and relationships. For definitions of these terms used in this test method, refer to Practices E 355, E 594, and E 1510.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *area slice*—the area resulting from the integration of the chromatographic detector signal within a specified retention time interval. In area slice mode (see 6.4.2), peak detection parameters are bypassed and the detector signal integral is recorded as area slices of consecutive, fixed duration time intervals.

3.2.2 *corrected area slice*—an area slice corrected for baseline offset by subtraction of the exactly corresponding area slice in a previously recorded blank (non-sample) analysis.

3.2.3 *cumulative corrected area*—the accumulated sum of corrected area slices from the beginning of the analysis through a given retention time, ignoring any non-sample area (for example solvent).

3.2.4 *final boiling point (FBP)*—the temperature (corresponding to the retention time) at which a cumulative corrected area count equal to 99.5 % of the total sample area under the chromatogram is obtained.

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

