



Designation: D7500 – 24

Standard Test Method for Determination of Boiling Range Distribution of Distillates and Lubricating Base Oils—in Boiling Range from 100 °C to 735 °C by Gas Chromatography¹

This standard is issued under the fixed designation D7500; 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 petroleum products by capillary gas chromatography using flame ionization detection. This standard test method has been developed through the harmonization of two test methods, Test Method [D6352](#) and IP 480. As both of these methods cover the same scope and include very similar operating conditions, it was agreed that a single standard method would benefit the global simulated distillation community.

1.2 This test method is not applicable for the analysis of petroleum or petroleum products containing low molecular weight components (for example naphthas, reformates, gasolines, diesel). Components containing hetero atoms (for example alcohols, ethers, acids, or esters) or residue are not to be analyzed by this test method. See Test Methods [D7096](#), [D2887](#), or [D7213](#) for possible applicability to analysis of these types of materials. This method is also not suitable for samples that will not elute completely from the gas chromatographic column, leaving residues. For such samples as crude oils and residues, see Test Methods [D5307](#) and [D7169](#).

1.3 This test method is applicable to distillates with initial boiling points above 100 °C and final boiling points below 735 °C (carbon 110); for example, distillates (IBP > 100 °C), base oils and lubricating base stocks.

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

1.5 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

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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1.6 This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 ASTM Standards:²

- [D86](#) Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure
- [D1160](#) Test Method for Distillation of Petroleum Products at Reduced Pressure
- [D2887](#) Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography
- [D4175](#) Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants
- [D5307](#) Test Method for Determination of Boiling Range Distribution of Crude Petroleum by Gas Chromatography (Withdrawn 2011)³
- [D6352](#) Test Method for Boiling Range Distribution of Petroleum Distillates in Boiling Range from 174 °C to 700 °C by Gas Chromatography
- [D7096](#) Test Method for Determination of the Boiling Range Distribution of Gasoline by Wide-Bore Capillary Gas Chromatography
- [D7169](#) Test Method for Boiling Point Distribution of Samples with Residues Such as Crude Oils and Atmospheric and Vacuum Residues by High Temperature Gas Chromatography
- [D7213](#) Test Method for Boiling Range Distribution of Petroleum Distillates in the Boiling Range from 100 °C to 615 °C by Gas Chromatography
- [E355](#) Practice for Gas Chromatography Terms and Relationships

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

³ The last approved version of this historical standard is referenced on www.astm.org.

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