



Designation: D2887 – 16a

Designation: 406

Standard Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography^{1,2}

This standard is issued under the fixed designation D2887; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This test method covers the determination of the boiling range distribution of petroleum products. The test method is applicable to petroleum products and fractions having a final boiling point of 538 °C (1000 °F) or lower at atmospheric pressure as measured by this test method. This test method is limited to samples having a *boiling range* greater than 55.5 °C (100 °F), and having a vapor pressure sufficiently low to permit sampling at ambient temperature.

NOTE 1—Since a *boiling range* is the difference between two temperatures, only the constant of 1.8 °F/°C is used in the conversion of the temperature range from one system of units to another.

1.1.1 *Procedure A (Sections 6 – 14)*—Allows a larger selection of columns and analysis conditions such as packed and capillary columns as well as a Thermal Conductivity Detector in addition to the Flame Ionization Detector. Analysis times range from 14 min to 60 min.

1.1.2 *Procedure B (Sections 15 – 23)*—Is restricted to only 3 capillary columns and requires no sample dilution. In addition, Procedure B is used not only for the sample types described in Procedure A but also for the analysis of samples containing biodiesel mixtures B5, B10, and B20. The analysis time, when using Procedure B (Accelerated D2887), is reduced to about 8 min.

1.2 This test method is not to be used for the analysis of gasoline samples or gasoline components. These types of samples must be analyzed by Test Method D7096.

1.3 The values stated in SI units are to be regarded as standard. The inch-pound units given in parentheses are for information only.

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:³

- 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
- D2892 Test Method for Distillation of Crude Petroleum (15-Theoretical Plate Column)
- D4057 Practice for Manual Sampling of Petroleum and Petroleum Products
- D4626 Practice for Calculation of Gas Chromatographic Response Factors
- D6708 Practice for Statistical Assessment and Improvement of Expected Agreement Between Two Test Methods that Purport to Measure the Same Property of a Material
- 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
- E260 Practice for Packed Column Gas Chromatography
- E355 Practice for Gas Chromatography Terms and Relationships

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 This standard has been developed through the cooperative effort between ASTM International and the Energy Institute, London. The EI and ASTM International logos imply that the ASTM International and EI standards are technically equivalent, but does not imply that both standards are editorially identical.

³ 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