



Designation: D8003 – 24

Standard Test Method for Determination of Light Hydrocarbons and Cut Point Intervals in Live Crude Oils and Condensates by Gas Chromatography¹

This standard is issued under the fixed designation D8003; 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 light hydrocarbons and cut point intervals by gas chromatography in live crude oils and condensates with VPCR₄ (see [Note 1](#)) up to 500 kPa at 37.8 °C.

NOTE 1—As described in Test Method [D6377](#).

1.2 Methane (C₁) to hexane (nC₆) and benzene are speciated and quantitated. Samples containing mass fractions of up to 0.5 % methane, 2.0 % ethane, 10 % propane, or 15 % isobutane may be analyzed. A mass fraction with a lower limit of 0.001 % exists for these compounds.

1.3 This test method may be used for the determination of cut point carbon fraction intervals (see [3.2.1](#)) of live crude oils and condensates from initial boiling point (IBP) to 391 °C (nC₂₄). The nC₂₄ plus fraction is reported.

1.4 Dead oils or condensates sampled in accordance with [12.1](#) may also be analyzed.

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 *Exception*—Where there is no direct SI equivalent such as tubing size.

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

1.7 *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

[D1265 Practice for Sampling Liquefied Petroleum \(LP\) Gases, Manual Method](#)

[D3700 Practice for Obtaining LPG Samples Using a Floating Piston Cylinder](#)

[D4175 Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants](#)

[D4307 Practice for Preparation of Liquid Blends for Use as Analytical Standards](#)

[D5002 Test Method for Density, Relative Density, and API Gravity of Crude Oils by Digital Density Analyzer](#)

[D6299 Practice for Applying Statistical Quality Assurance and Control Charting Techniques to Evaluate Analytical Measurement System Performance](#)

[D6377 Test Method for Determination of Vapor Pressure of Crude Oil: VPCR_x \(Expansion Method\)](#)

[D6792 Practice for Quality Management Systems in Petroleum Products, Liquid Fuels, and Lubricants Testing Laboratories](#)

[D8009 Practice for Manual Piston Cylinder Sampling for Volatile Crude Oils, Condensates, and Liquid Petroleum Products](#)

[E1510 Practice for Installing Fused Silica Open Tubular Capillary Columns in Gas Chromatographs](#)

2.2 *Other Regulations*:

[CAN/CGSB-3.0 No. 14.3-2022 Standard Test Method for the Identification of Hydrocarbon Components in Automotive Gasoline using Gas Chromatography](#)³

3. Terminology

3.1 *Definitions*:

3.1.1 For definitions of terms used in this test method, refer to Terminology [D4175](#).

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 [D02.04.0L](#) on Gas Chromatography Methods.

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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 Available from Standards Council of Canada (SCC), 600–55 Metcalfe St., Ottawa, ON K1P 6L5, <http://www.scc.ca>.

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