



Designation: D7995 – 19

Standard Test Method for Total Water in Liquid Butane by Liquefied Gas Sampler and Coulometric Karl Fischer Titration¹

This standard is issued under the fixed designation D7995; 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 describes the use of a specialized liquefied gas sampler coupled to a coulometric Karl Fischer (KF) titrator for the determination of water in liquid butane with water concentrations from 1 mg/kg to 100 mg/kg.

NOTE 1—Other liquefied petroleum gases described in Specification D1835 including propane, propene (propylene), butylenes and mixtures of these materials and other light hydrocarbons, and dimethyl ether described in Specification D7901, can be analyzed by this method but the precision has not been studied and therefore the stated precision has not been validated for these materials.

1.2 The values stated in SI units are to be regarded as standard. The values given in parentheses after SI units are provided for information only and are not considered standard.

1.3 *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.* See Section 10 for specific warning statements.

1.4 *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
- D1835 Specification for Liquefied Petroleum (LP) Gases
- D2713 Test Method for Dryness of Propane (Valve Freeze Method)

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.H0 on Liquefied Petroleum Gas.

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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.

D3700 Practice for Obtaining LPG Samples Using a Floating Piston Cylinder

D5623 Test Method for Sulfur Compounds in Light Petroleum Liquids by Gas Chromatography and Sulfur Selective Detection

D6299 Practice for Applying Statistical Quality Assurance and Control Charting Techniques to Evaluate Analytical Measurement System Performance

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

D6304 Test Method for Determination of Water in Petroleum Products, Lubricating Oils, and Additives by Coulometric Karl Fischer Titration

D7901 Specification for Dimethyl Ether for Fuel Purposes

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

E203 Test Method for Water Using Volumetric Karl Fischer Titration

2.2 Occupational Safety and Health Administration Document:

OSHA Regulations—29 CFR paragraphs 1910.1000 and 1910.1200³

2.3 Other Standards:

UOP 163 Hydrogen Sulfide and Mercaptan Sulfur in Liquid Hydrocarbons by Potentiometric Titration⁴

3. Terminology

3.1 Definitions:

3.1.1 *liquefied petroleum gas, (LP Gas, LPG), n*—a narrow boiling range mixture of hydrocarbons consisting of propane, propylene, butanes and butylenes, individually or in specified combinations, with limited amounts of other hydrocarbons and naturally occurring non-hydrocarbons.

3.1.2 *dimethyl ether (DME), n*—the chemical compound CH_3OCH_3 .

3.2 Definitions of Terms Specific to This Standard:

³ Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.access.gpo.gov>.

⁴ Available from <https://www.astm.org/>