



Designation: D2158 – 21

Standard Test Method for Residues in Liquefied Petroleum (LP) Gases¹

This standard is issued under the fixed designation D2158; 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 extraneous materials weathering above 38 °C that are present in liquefied petroleum gases. The extraneous materials will generally be dissolved in the LPG, but may have phase-separated in some instances.

1.2 Liquefied petroleum gases that contain certain anti-icing additives can give erroneous results by this test method.

1.3 Although this test method has been used to verify cleanliness and lack of heavy contaminants in propane for many years, it might not be sensitive enough to protect some equipment from operational problems or increased maintenance. A more sensitive test, able to detect lower levels of dissolved contaminants, could be required for some applications.

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.*

1.6 *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

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.

D96 Test Method for Water and Sediment in Crude Oil by Centrifuge Method (Field Procedure) (Withdrawn 2000)³
D1796 Test Method for Water and Sediment in Fuel Oils by the Centrifuge Method (Laboratory Procedure)
D1835 Specification for Liquefied Petroleum (LP) Gases
D7756 Test Method for Residues in Liquefied Petroleum (LP) Gases by Gas Chromatography with Liquid, On-Column Injection
E1137 Specification for Industrial Platinum Resistance Thermometers
E2251 Specification for Liquid-in-Glass ASTM Thermometers with Low-Hazard Precision Liquids
E2877 Guide for Digital Contact Thermometers

2.2 Other Standards:

EN 15470 Liquefied petroleum gases – Determination of dissolved residues – High temperature gas chromatographic method⁴
EN 15471 Liquefied petroleum gases – Determination of dissolved residues – High temperature gravimetric method⁴
EN 16423 Liquefied petroleum gases – Determination of dissolved residue – Gas chromatographic method using liquid, on-column injection⁴
EN ISO 6246 Petroleum products – Gum content of fuels – Jet evaporation method⁵
ISO 13757 Liquefied petroleum gases – Determination of oily residues – High-temperature method⁵

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *oil stain observation, n*—the volume of solvent-residue mixture required to yield an oil stain or ring that persists for 2 min under specified conditions on absorbent paper.

3.1.2 *residue, n*—the volume, measured to the nearest 0.05 mL, of the residual material boiling above 38 °C resulting

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

⁴ Available from European Committee for Standardization (CEN), Avenue Marnix 17, B-1000, Brussels, Belgium, <http://www.cen.eu>.

⁵ Available from International Organization for Standardization (ISO), ISO Central Secretariat, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <http://www.iso.org>.

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