



Designation: D1267 – 23

Standard Test Method for Gauge Vapor Pressure of Liquefied Petroleum (LP) Gases (LP-Gas Method)¹

This standard is issued under the fixed designation D1267; 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 gauge vapor pressures of liquefied petroleum gas products at temperatures of 37.8 °C (100 °F) up to and including a test temperature of 70 °C (158 °F). (**Warning**—Extremely flammable gas. May be harmful when inhaled.)

NOTE 1—An alternative method for measurement of vapor pressure of liquefied petroleum gases is Test Method [D6897](#).

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.* For specific warning statements, see [1.1](#) and [Annex A2](#).

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

[D323](#) Test Method for Vapor Pressure of Petroleum Products (Reid Method)

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

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

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.

[D6897](#) Test Method for Vapor Pressure of Liquefied Petroleum Gases (LPG) (Expansion Method)

3. Terminology

3.1 Definitions:

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

3.1.2 *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 (such as ethane) and may contain naturally occurring, petroleum-derived non-hydrocarbons.

3.1.3 *vapor pressure*, *n*—the pressure exerted by the vapor of a liquid when in equilibrium with the liquid.

4. Summary of Test Method

4.1 The test apparatus, consisting of two interconnected chambers and equipped with a suitable pressure gauge, is purged with a portion of the sample which is then discarded. The apparatus is then filled completely with the portion of the sample to be tested. Thirty-three and one-third to forty volume percent of the sample content of the apparatus is immediately withdrawn to provide adequate free space for product expansion. The apparatus is then immersed in a water bath maintained at the standard test temperature of 37.8 °C (100 °F) or, optionally, at some higher test temperature up to and including a test temperature of 70 °C (158 °F).

4.2 The observed gauge pressure at equilibrium, after correcting for gauge error and correcting to a standard barometric pressure, is reported as the LPG Vapor Pressure at the selected test temperature.

5. Significance and Use

5.1 Information on the vapor pressures of liquefied petroleum gas products under temperature conditions from 37.8 °C to 70 °C (100 °F to 158 °F) is pertinent to selection of properly designed storage vessels, shipping containers, and customer utilization equipment to ensure safe handling of these products.

5.2 Determination of the vapor pressure of liquefied petroleum gas is important for safety reasons to ensure that the

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