



Designation: D6849 – 22

Standard Practice for Storage and Use of Liquefied Petroleum Gases (LPG) in Sample Cylinders for LPG Test Methods¹

This standard is issued under the fixed designation D6849; 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 practice covers information for the storage and use of LPG samples in standard cylinders of the type used in sampling method, Practice D1265 and floating piston cylinders used in sampling method, Practice D3700.

1.2 This practice is especially applicable when the LPG sample is used as a quality control (QC) reference material for LPG test methods, such as gas chromatography (GC) analysis (Test Method D2163) or vapor pressure (Test Method D6897) that use only a few mL per test, since relatively small portable Department of Transportation (DOT) cylinders (for example, 20 lb common barbecue cylinders, or common Mower/Forklift cylinders) can be used.

1.2.1 Modification of the pressure relief (QCC1) valve on single access port cylinders may prohibit the collection or transport of cylinders outside of permitted facilities such as refineries, gas plants or pipeline stations. No modification is generally required for multi-port mower/forklift cylinders that have a separate access port for pressure relief and additional access ports for filling, liquid/vapor withdrawal or liquid level indication. Consult the Authority having Jurisdiction for detailed regional regulatory requirements for transport of LPG in pressurized cylinders.

1.3 This practice can be applied to other test methods. However, test methods that require a large amount of sample per test (for example, manual vapor pressure Test Method D1267) will require QC volumes in excess of 1000 L if stored in standard DOT cylinders or American Society of Mechanical Engineers (ASME) vessels.

1.3.1 Test methods for trace materials that may be sensitive to vessel surfaces (for example H₂O, H₂S/sulfur, or trace residues) could preferably use aluminum, stainless steel or internally coated vessels to minimize surface absorption/reaction or larger vessels to minimize surface/volume ratio.

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

D1267 Test Method for Gauge Vapor Pressure of Liquefied Petroleum (LP) Gases (LP-Gas Method)

D2163 Test Method for Determination of Hydrocarbons in Liquefied Petroleum (LP) Gases and Propane/Propene Mixtures by Gas Chromatography

D3700 Practice for Obtaining LPG Samples Using a Floating Piston Cylinder

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

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

3. Terminology

3.1 *Definitions:*

3.1.1 *floating piston cylinder (FPC), n*—high-pressure sample container with a free-floating internal piston that effectively divides the container into two separate compartments.

3.1.1.1 *Discussion*—A floating piston cylinder is used to collect a sample of liquid under pressure without the formation of a gaseous phase which can result in changes in the composition of the liquid sample.

3.1.2 *high-pressure sample cylinder, n*—a container used for storage and transportation of a sample obtained at pressures above atmospheric pressure.

¹ This practice is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.08 on Volatility.

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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.

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