

Method compliance: ASTM D2158 and QOST R56868

Scope D2158

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

Significance and Use

- Control over the residue content (required by Specification D1835) is of considerable importance in end-use applications of LPG. In liquid feed systems, residues can lead to troublesome deposits and, in vapor withdrawal systems, residues that are carried over can foul regulating equipment. Residues that remain in vapor-withdrawal systems will accumulate, can be corrosive, and will contaminate subsequent product. Water, particularly if alkaline, can cause failure of regulating equipment and corrosion of metals.

Scope R56868

- The standard establishes a method for determining the volatility of various types of liquefied petroleum gases (LPG), which characterizes their relative purity. To determine the presence of butane and heavier components in propane LPG and pentane with heavier components in propane-butane and butane fuels, you can use the test results taking into account saturated vapor pressure and product density. The presence of less volatile hydrocarbon compounds than the main LPG is determined by the increase in the evaporation temperature of 95% of the product.

Significance and Use

- Volatility, determined by the evaporation temperature of 95% of the product, characterizes the amount of volatile components present in the product. Volatility in combination with the limiting saturated vapor pressure is used to obtain a single-product for the classification of propane and butane products. A two-component propane-butane mixture is obtained using volatility and a saturated vapor pressure, which depends on the density. Using volatility and saturated vapor pressure, one can confirm that commercial propane consists mainly of propane and propylene, with propane being the main component.

Equipment

