



Designation: D 2421 – 012

An American National Standard

Standard Practice for Interconversion of Analysis of C₅ and Lighter Hydrocarbons to Gas-Volume, Liquid-Volume, or ~~Weight~~ Mass Basis¹

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1. Scope

1.1 This practice describes the procedure for the interconversion of the analysis of C₅ and lighter hydrocarbon mixtures to gas-volume (mole), liquid-volume, or ~~weight in vacuum~~ mass basis.

1.2 The computation procedures described assume that gas-volume percentages have already been corrected for nonideality of the components as a part of the analytical process by which they have been obtained. These are numerically the same as mole percentages.

1.3 The procedure assumes the absence of nonadditivity corrections for mixtures of the pure liquid compounds. This is approximately true only for mixtures of hydrocarbons of the same number of carbon atoms, and in the absence of diolefins and acetylenic compounds.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Source of Data

2.1 The basic values for the relative density 15.6/15.6°C (60/60°F) of the pure compounds have been obtained from the Thermodynamics Research Center, Texas A & M University, except where otherwise noted. The values for methane, ethylene, and acetylene are not those of pure materials but are assumed to apply as a component of a liquid mixture.

2.2 The conversion factors for 1 mL of ideal gas at 15.6°C (60°F) and 101.3 kPa (760 mm Hg) to millilitres of liquid at 15.6°C (60°F) have been calculated as follows:

¹ This practice is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.H on Liquefied Petroleum Gas.

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