Designation: D4307 – 99 (Reapproved 2004)

Standard Practice for Preparation of Liquid Blends for Use as Analytical Standards[1]

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1. Scope

1.1 This practice covers a laboratory procedure for the preparation of small volumes of multicomponent liquid blends for use as analytical standards.

1.2 This practice is applicable to components that are normally liquids at ambient temperature and pressure, or solids that will form a solution when blended with liquids. Butanes can be included if precaution is used in blending them.

1.3 This practice is limited to those components that fulfill the following conditions:

1.3.1 They are completely soluble in the final blend.

1.3.2 They are not reactive with other blend components or with blend containers.

1.3.3 The combined vapor pressure of the blended components is such that there is no selective evaporation of any of the components.

1.3.3.1 The butane content of the blend is not to exceed 10 %. (**Warning**: Extremely flammable liquefied gas under pressure. Vapor reduces oxygen available for breathing.) Components with a vapor pressure higher than butanes are not to be blended.

1.4 The values stated in SI units are to be regarded as the 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 and health practices and determine the applicability of regulatory limitations prior to use.*

[1] This practice is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.04 on Hydrocarbon Analysis.

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2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1364 Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)

3. Summary of Practice

3.1 The individual blend components are precisely weighed and combined in an inert, tight sealing glass vial or similar container. When volatility is a consideration, the components of lowest vapor pressure (least volatile) are added first and the highest (most volatile) last. Mass (weight) percent composition of the final blend is calculated from the mass and purities of the pure components. Volume percent composition can be calculated using the density of each component.

4. Significance and Use

4.1 The laboratory preparation of liquid blends of known composition is required to provide analytical standards for the calibration of chromatographic and other types of analytical instrumentation.

5. Apparatus

5.1 *Containers*:

5.1.1 *Vial*, glass, threaded neck, approximately 22-mL capacity, short style. Vials of other capacity may be substituted, as required. When blending light sensitive components, use amber glass vials or wrap clear glass vials with black tape.

5.1.2 *Bottle Cap*, molded plastic with TFE-fluorocarbon, polypropylene, or polyethylene conical liner.

[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.