



Standard Practice for Ampulization and Storage of Gasoline and Related Hydrocarbon Materials¹

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1. Scope

1.1 This practice covers a general guide for the ampulization and storage of gasoline and related hydrocarbon mixtures that are to be used as calibration standards or reference materials. This practice addresses materials, solutions, or mixtures, which may contain volatile components. This practice is not intended to address the ampulization of highly viscous liquids, materials that are solid at room temperature, or materials that have high percentages of dissolved gases that cannot be handled under reasonable cooling temperatures and at normal atmospheric pressure without losses of these volatile components.

1.2 This practice is applicable to automated ampule filling and sealing machines as well as to manual ampule filling devices, such as pipettes and hand-operated liquid dispensers.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 *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. Referenced Documents

2.1 ASTM Standards:²

D6362 Practice for Certificates of Reference Materials for Water Analysis

E826 Practice for Testing Homogeneity of a Metal Lot or Batch in Solid Form by Spark Atomic Emission Spectrometry

2.2 ISO Standards:³

ISO Guide 30 Terms and Definitions Used in Connection with Reference Materials

ISO Guide 31 Contents of Certificates of Reference Materials

ISO Guide 35 Certification of Reference Materials – General and Statistical Principles

ISO/REMCO N280 Homogeneity Testing Procedure for the Evaluation of Interlaboratory Test Samples

2.3 Government Standard:⁴

29 CFR 1910.1200 Hazard Communication

3. Terminology

3.1 Definitions:

3.1.1 *accepted reference value (ARV)*—a value that serves as an agreed-upon reference for comparison and that is derived as: (1) a theoretical or established value, based on scientific principles; (2) an assigned value, based on experimental work of some national or international organization, such as the National Institute of Standards and Technology (NIST); or (3) a consensus value, based on collaborative experimental work under the auspices of a scientific or engineering group.

3.1.2 *ampule*—a glass vessel for the storage of liquid materials, possessing a long narrow neck for the purpose of providing a flame-sealed closure.

3.1.3 *headspace*—the unfilled capacity of an ampule that allows for physical expansion due to temperature and pressure changes of the filled material while maintaining the integrity of the package.

3.1.4 *homogeneity*—the uniformity of the characteristics of the packaged material across the entire packaging run determined for the purpose of demonstrating the suitability of the batch for its intended purpose.

3.1.4.1 *Discussion*—There are two homogeneity testing cases; one in which the material is ampulized as a reference material at the time of ampulization, and one in which the

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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.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.