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AMERICAN SOCIETY FOR TESTING AND MATERIALS
100 Barr Harbor Dr., West Conshohocken, PA 19428
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Standard Specification for Sampling and Testing of Reusable Laboratory Glassware¹

This standard is issued under the fixed designation E 1157; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers laboratory items for use until they are no longer considered functional for the intended purpose. It is written specifically for reusable items and is not to be confused with disposable (single use) items that are described in other standards.

1.2 This specification covers the sampling inspection and basic testing criteria for the following four types of laboratory glassware: blown and pressed glassware, nongraduated²; blown and pressed glassware, graduated²; tubular glassware, nongraduated; and tubular glassware, graduated.

1.3 This specification is intended to be used in conjunction with a standard specification for a specific laboratory glassware product.

1.4 The following precautionary statement pertains only to the test method portion, Section 6, of this specification. *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:

C 162 Terminology of Glass and Glass Products³

E 542 Practice for Calibration of Laboratory Volumetric Apparatus⁴

E 671 Specification for Maximum Permissible Thermal Residual Stress in Annealed Glass Laboratory Apparatus⁴

2.2 Military Standard:

MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes⁵

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

¹ This specification is under the jurisdiction of ASTM Committee E-41 on Laboratory Apparatus and is the direct responsibility of Subcommittee E41.01 on Glass Apparatus.

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² As defined in Terminology C 162.

³ Annual Book of ASTM Standards, Vol 15.02.

⁴ Annual Book of ASTM Standards, Vol 14.02.

⁵ Available from Specification Sales (3FRSBS) Bldg. 197, Washington Navy Yard, GSA, Washington, DC 20407.

3.1.1 *lot*—items of the same respective type, class, style, and size offered for acceptance at one time that have been produced by one manufacturer under essentially the same manufacturing conditions.

3.1.2 *inspection*—as both “examination” (such as visual investigation without the use of special laboratory appliances or procedure) and “testing” (determination by technical means of physical and chemical properties) of the item.

4. Performance Requirements

4.1 The product shall be designed to meet test performance requirements specified in Section 6. Testing of individual lots may be obviated when process controls are employed and monitored. Deviation from or changes to established manufacturing procedures that could adversely affect performance of a product shall be cause for performing applicable testing requirements on a specific lot to verify quality acceptance.

4.2 Alternate testing methods, inspection levels, and sample sizes may also be implemented. Any deviation shall not negate responsibility of product from complying with the applicable test performance standards.

4.3 Unless otherwise specified in the contract or purchase order, the supplier shall be responsible for the performance of all designated inspection requirements. Except as otherwise specified in the contract or purchase order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements. The purchaser has the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to ensure supplies conform to prescribed requirements.

5. Sampling and Inspection

5.1 Sampling shall be conducted in accordance with MIL-STD-105 with the levels of inspection and examination and acceptable quality levels as noted in Tables 1-13 unless otherwise agreed upon by purchaser and vendor. Where applicable, distilled water and reagent grade chemicals shall be used throughout the tests. Inspection shall be conducted in accordance with applicable section and individual specifications.

6. Test Methods

6.1 *Leakage Test*—The item shall be filled to nominal capacity with distilled water at $25 \pm 5^\circ\text{C}$, normally capped or