



Designation: E1878-97 (Reapproved 2003) Designation: E 1878 – 97 (Reapproved 2008)

Standard Specification for Laboratory Glass Volumetric Flasks, Special Use¹

This standard is issued under the fixed designation E 1878; 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.

1. Scope

1.1 This specification covers requirements for glass volumetric flasks of precision grades suitable for laboratory purposes and of specialty use. Each flask shall be marked with the letter “A” to signify compliance with applicable construction and accuracy requirements. Flasks may be marked with an identification number (serial number) at the option of the manufacturer.

NOTE 1—Specifications for standard volumetric flasks are given in specification E 288.

NOTE 2—Specifications for microvolumetric flasks in sizes from 1 to 25 mL are given in specification E 237.

1.2 The values stated in SI units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards:*²

E 237 [Specification for Laboratory Glass Microvolumetric Vessels \(Volumetric Flasks and Centrifuge Tubes\)](#)

E 288 [Specification for Laboratory Glass Volumetric Flasks](#)

E 438 [Specification for Glasses in Laboratory Apparatus](#)

E 542 [Practice for Calibration of Volumetric Ware](#)²

E671 [Specification for Maximum Permissible Thermal Stress in Annealed Glass Laboratory Apparatus](#)²—[Practice for Calibration of Laboratory Volumetric Apparatus](#)

E 694 [Specification for Laboratory Glass Volumetric Apparatus](#)

E 920 [Specification for Commercially Packaged Laboratory Apparatus](#)

E 921 [Specification for Export Packaged Laboratory Apparatus](#)

E 1133 [Practice for Performance Testing of Packaged Laboratory Apparatus for United States Government Procurements](#)

E 1157 [Specification for the Sampling and Testing of Reusable Laboratory Apparatus](#)²—[Glassware](#)

3. Styles

3.1 *Style 1*—Bates, sugar, wide neck, size 100 mL

3.2 *Style 2*—Kohlraush, enlarged cup, sizes 100, 200, and 500 mL

3.3 *Style 3*—Sugar, two graduations, sizes 100 to 110 and 200 to 220 mL

4. General Requirements

4.1 *Calibration*—flasks calibrate in accordance with the methods outlined in Practice E 542.

4.2 *General*—See Specification E 694 for general requirements not covered in this specification.

5. Design

5.1 *Shape*—Style 1 and 3 flask necks shall be designed with re-inforced rims for acceptance of rubber stopper or may be flared. Style 2 shall have a neck with an enlarged cup beaded to accept a rubber stopper. Flask shapes shall permit complete emptying and thorough cleaning. The area of the bottom or base shall be of sufficient size so the flask, when empty, shall stand on an inclined plane of 15° to the horizontal.

5.2 *Volumetric Tolerances*—Flasks shall be in accordance with tolerances appearing in Table 1.

5.3 *Markings*—All markings shall be permanent and legible.

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

Current edition approved May 10, 1997. Published May 1998.

¹ This specification is under the jurisdiction of ASTM Committee E41 on Laboratory Apparatus and is the direct responsibility of Subcommittee E41.01 on Apparatus . Current edition approved Nov. 1, 2008. Published January 2009. Originally approved in 1997. Last previous edition approved in 2003 as E 1878-97 (2003).

² Annual Book of ASTM Standards, Vol 14.02.

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.