Designation: E1377 – 99 (Reapproved 2022)

Standard Specification for Laboratory Glass Kjeldahl Flasks[1]

This standard is issued under the fixed designation E1377; 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 provides standard dimensional requirements for glass Kjeldahl flasks for nitrogen digestion analysis.

1.2 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E147 Specification for Apparatus for Microdetermination of Nitrogen by Kjeldahl Method

E438 Specification for Glasses in Laboratory Apparatus

E671 Specification for Maximum Permissible Thermal Residual Stress in Annealed Glass Laboratory Apparatus

E694 Specification for Laboratory Glass Volumetric Apparatus

E920 Specification for Commercially Packaged Laboratory Apparatus

E921 Specification for Export Packaged Laboratory Apparatus

E1133 Practice for Performance Testing of Packaged Laboratory Apparatus for United States Government Procurements

E1157 Specification for Sampling and Testing of Reusable Laboratory Glassware

3. Classification

3.1 *Ungraduated Flasks, Type I,* shall be of the following capacities:

100 mL
300 mL
500 mL
650 mL
800 mL

3.1.1 Sizes 10 mL and 30 mL and the Soltys style 30 mL are covered under Specification E147 and are not included herein.

3.2 *Graduated Flasks, Type II,* shall be of the following capacity:

800 mL, graduated at 1000 mL

NOTE 1—The term millilitre (mL) is commonly used as a special name for the cubic centimetre (cm^3) and similarly the litre (L) for 1000 cubic centimetres, in accordance with the International System of Units (SI).

4. Material and Annealing

4.1 Flasks shall be made of borosilicate glass conforming to the requirement of Type I, Class A of Specification E438.

4.2 Maximum residual thermal stress shall conform to Specification E671.

5. Appearance

5.1 The general appearance of the flasks shall conform to Fig. 1.

6. Design

6.1 Necks on all flasks shall be circular in cross section, and shall be perpendicular to center of flask body.

6.2 Top finish of flask shall not be belled over 2 in. from the top. Top shall be tooled or beaded.

6.3 Interior neck finish of sizes 500 and 800 mL may be tooled to accept special rubber stopper especially made for Kjeldahl flasks.

6.4 Bottom of flask shall be hemispherical in shape, while top has a curved taper to point of junction with the flask neck. (See Fig. 1.)

6.5 Wall thickness of flasks shall be controlled in accordance with Table 1.

7. Volumetric Accuracy

7.1 Tolerance on volumetric accuracy of Type II flasks shall be in compliance with Specification E694 (1000 ± 1.5 mL).

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

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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.