



Standard Specification for Laboratory Glass Kjeldahl Flasks¹

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1. Scope

1.1 This specification provides standard dimensional requirements for glass Kjeldahl flasks for nitrogen digestion analysis.

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.

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.

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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.

3.2 *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.)

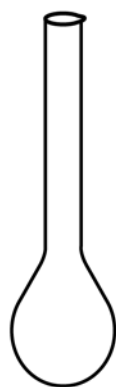
6.5 Wall thickness of flasks shall be controlled in accordance with Table 1.

7. Volumetric Accuracy

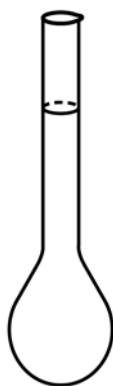
7.1 Tolerance on volumetric accuracy of Type II flasks shall be in compliance with Specification E694 (1000 ± 1.5 mL).

8. Capacity and Dimensions

8.1 The nominal capacity of the ungraduated, Type I flasks shall not exceed the actual capacity to the base of the neck. The 1000 mL graduated flask capacity ring shall be within the neck of the flask. Dimensions shall conform to the requirements of Table 1.



Type I



Type II

FIG. 1 Glass Kjeldahl Flasks

9. Markings

9.1 Each flask shall be permanently marked with the name or known trademark of the manufacturer and the nominal capacity for Type I flasks and actual capacity for Type II flasks.

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TABLE 1 Capacity and Dimensions for Glass Kjeldahl Flasks

Nominal Capacity (mL)	Body OD max (mm)	Body Wall Thickness min (mm)	Neck OD max (mm)	Stopper Size	Overall Height max (mm)
100	60	0.8	23	1 or 2	214
300	82	0.8	28	5	310
500	103	0.8	34	6 or ^A	327
650	108	0.8	34	6	327
800	119	0.8	36	7 or ^A	369

^A Stoppers specially made for Kjeldahl flasks.

9.2 There shall be an area on one side of the flask neck for marking with a pencil.

10. Sampling

10.1 Refer to Specification E1157.

11. Sampling

11.1 Select from Specifications E920, E921, and E1133.

12. Keywords

12.1 flasks; glass; kjeldahl