Designation: E1379 – 90 (Reapproved 2022)

Standard Specification for Laboratory Glass Dewar Flask[1]

This standard is issued under the fixed designation E1379; 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 material and performance requirements for glass Dewar flasks suitable for general laboratory use.

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

1.3 *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]

B85 Specification for Aluminum-Alloy Die Castings

E438 Specification for Glasses in Laboratory Apparatus

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

3. Classification

3.1 Glass Dewar flasks shall be of the following sizes: 265 mL, 665 mL, 1000 mL, 1900 mL, 4300 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, Specification E438.

4.2 Maximum residual thermal stress shall conform to Specification E671.

4.3 Aluminum base alloy metal shall conform to Alloy Number A380 of Specification B85.

5. Appearance

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

6. Design

6.1 Flasks shall be cylindrically shaped and have double walls silvered on the inside. The space between the walls shall be evacuated to a vacuum level of 5×10^{-7} Torr and sealed. Temperatures are to be held in excess of 500°C during evacuation.

6.2 Flasks shall be firmly cemented into the base to protect the sealing tip.

6.3 Flasks shall have a protective plastic mesh, or shall be coated with a baked-on plastisol over exposed glass surface.

7. Capacity and Dimensions

7.1 Standard Dewar flasks for government use shall conform to the requirements of Table 1.

7.2 Other Dewar flasks (not found in Table 1) are approved for use if they meet all of the design criteria found in Section 6.

8. Keywords

8.1 dewar; flasks; glass

[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.

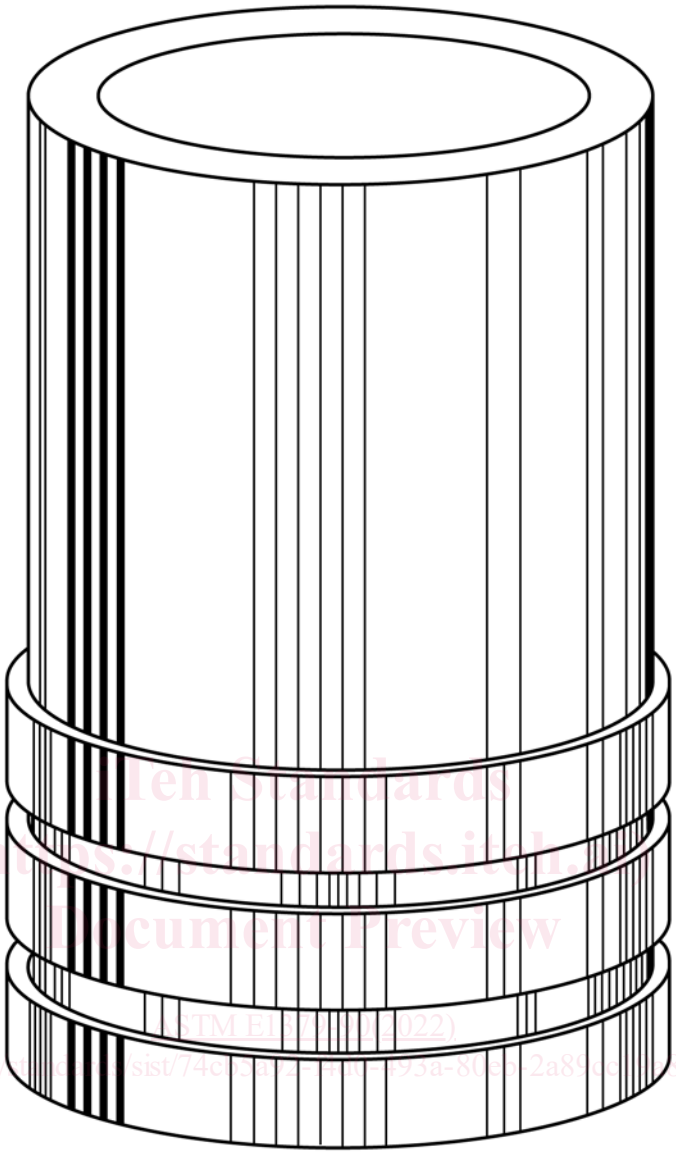

FIG. 1 Glass Dewar Flask

TABLE 1 Capacity and Dimensions for Glass Dewar Flasks

Nominal Capacity (mL)	O.D. Body Nominal (mm)	Overall Height Nominal (mm)	I.D. Body Nominal (mm)	Body Depth Nominal (mm)
265	75	152	60	113
665	86	241	68	195
1000	86	343	68	302
1900	149	267	119	195
4300	177	337	152	276