Designation: E890 – 94 (Reapproved 2021)

Standard Specification for Disposable Glass Culture Tubes[1]

This standard is issued under the fixed designation E890; 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 the requirements for disposable glass tubes suitable for general testing and culturing applications in blood banks, hematology, bacteriology, virology, and tissue culture laboratories.

1.2 For practical purposes, the word "disposable" according to this specification and expected product performance expressed in this specification describes those disposable glass culture tubes that are to be used one time only. *Any institution or individual who reuses a disposable glass culture tube must bear full responsibility for its safety and effectiveness.*

1.3 For packaging standards, choose among the following: Specifications E920 or E921 or Practice E1133.

1.4 *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]

C148 Test Methods for Polariscopic Examination of Glass Containers

E438 Specification for Glasses in Laboratory Apparatus

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

3. Materials

3.1 The disposable glass culture tubes shall be made of glass in accordance with the requirements of Type I, Class A or B (borosilicate glass) or Type II (soda-lime glass) of Specification E438.

4. Design

4.1 The tubes shall be of one-piece construction in accordance with Fig. 1 for shape, and any cross section of the tube, taken in a plane perpendicular to the longitudinal axis, shall preferably be circular.

4.2 The top or open end of the tube shall be smoothly fire-polished at right angles to the horizontal axis of the tube.

4.3 The bottom or closed end of the tube shall be completely closed and shall have a spherical radius inside and outside in accordance with Fig. 1. The wall thickness in the bottom shall be at least 66⅔ % of the side wall thickness, but not more than 210 % of the side wall thickness.

4.4 Residual thermal stress shall not exceed 750 psi when determined in accordance with Specification E671.

4.5 *Workmanship*—The glass tube shall be free of defects that impair serviceability. The glass tube shall be transparent, clean, dry, and reasonably free of foreign material, loose or embedded, lint, or stains when viewed under normal room lighting with the unaided eye.

4.6 *Dimensions*—The glass tubes shall be in accordance with the dimensions given in Table 1.

5. Keywords

5.1 culture; disposable; glass; tubes

[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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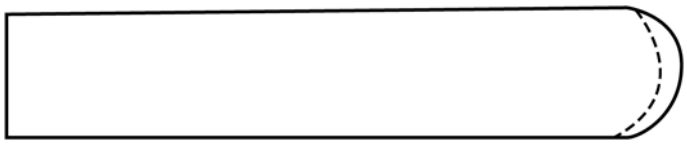
[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.



NOTE 1—Maximum deviation from hemispherical shall not exceed 18 % of outside diameter.

FIG. 1 Disposable Glass Culture Tube

TABLE 1 Dimensional Limits for Glass Disposable Culture Tubes

Nominal Size, mm	External Diameter, mm	Wall Thickness, mm	Overall Length, mm
6 by 50	05.50 to 6.50	0.35 to 0.60	47.5 to 52.5
10 by 75	09.50 to 10.50	0.50 to 0.70	72 to 77.5
12 by 75	11.50 to 12.50	0.55 to 0.80	72 to 77.5
13 by 100	12.50 to 13.50	0.55 to 0.80	97 to 103
16 by 100	15.45 to 16.50	0.65 to 0.90	122 to 128
16 by 125	15.45 to 16.50	0.65 to 0.90	147 to 153
16 by 150	15.45 to 16.50	0.65 to 0.90	147 to 153
18 by 150	17.50 to 18.50	0.70 to 1.05	147 to 153
20 by 150	19.50 to 20.50	0.80 to 1.10	147 to 153