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Standard Specification for Disposable Glass Culture Tubes¹

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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 document describes those disposable glass culture tubes which 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 E 920 or E 921 or Practice E 1133.

2. Referenced Documents

2.1 ASTM Standards:

C 148 Methods of Polariscopic Examination of Glass Containers²

E 438 Specification for Glasses in Laboratory Apparatus³

E 671 Specification for Maximum Permissible Thermal Residual Stress in Annealed Glass Laboratory Apparatus³

E 920 Specification for Commercially Packaged Laboratory Apparatus³

E 921 Specification for Export Packaged Laboratory Apparatus³

¹ This specification is under the jurisdiction of ASTM Committee E-41 on Laboratory Apparatus and is the direct responsibility of Subcommittee E 41.01 on Apparatus.

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² Annual Book of ASTM Standards, Vol 15.02.

³ Annual Book of ASTM Standards, Vol 14.04.

E 1133 Practice for Performance Testing of Packaged Laboratory Apparatus for Specialized Procurement³

3. Materials

3.1 The disposable glass culture tubes shall be made of glass conforming to the requirements of Type I, Class A or B (borosilicate glass) or Type II (soda-lime glass) of Specification E 438.

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 $66\frac{2}{3}$ % 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 E 671.

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 conform to the dimensions given in Table 1.

5. Keywords

5.1 culture; disposable; glass; tubes