Designation: E 734 – 80 (Reapproved 1999)ε1

Standard Specification for Disposable Glass Blood Sample Capillary Tube (Microhematocrit)[1]

This standard is issued under the fixed designation E 734; 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.

ε[1] NOTE—Keywords were added in March 2000.;

1. Scope

1.1 This specification covers disposable glass blood sample capillary tubes for use in microhematocrit procedures.

2. Referenced Documents

2.1 *ASTM Standards:*
E 438 Specification for Glasses in Laboratory Apparatus[2]
2.2 *Other Standard:*
USP XIX United States Pharmacopeia

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*
3.1.1 *disposable capillary tubes*—in accordance with this specification and the expected product performance expressed in this standard, those capillary tubes which are to be used one time only. *Any institution or individual who reuses a disposable capillary tube must bear full responsibility for its safety and effectiveness*.

4. Classification

4.1 This specification covers two different disposable glass sample capillary tubes as follows:
Type I—Coated with heparin.
Type II—Uncoated.

5. Materials

5.1 *Glass*—The pipets made to this specification shall be fabricated from borosilicate glass, Type I, Class B, or soda-lime glass, Type II, in accordance with Specification E 438.

5.2 *Heparin*—Heparin shall be of ammonium salt isolated from the lungs or intestinal mucosa of beef or pork origin. The heparin potency shall be 1 mg of ammonium heparin compound which shall be equal to at least 60 United States Pharmacopeia (USP) units. Dry or wet heparin may be applied to the tube.

6. Physical Requirements

6.1 *Design*—The capillary tubes shall be straight and open at both ends without lip or constriction. The capillary tube may be lightly firepolished on one end. The bore of the tube shall be uniform and not vary in excess of 0.025 mm in 75 mm.

6.2 *Dimensions*—Type I and Type II capillary tubes shall have a length of 75 ± 0.5 mm. Inside diameter shall be from 1.07 to 1.24 mm. Wall thickness shall be 0.20 + 0.03, – 0.02 mm, as specified in Fig. 1.

6.3 *Workmanship*—The capillary tubes shall be free of defects that noticeably detract from their appearance or impair their serviceability. The capillary tube shall be free of lint, or significant foreign matter, loose or embedded, when viewed under normal room lighting. The tube ends shall be cut approximately 90° to the tube axis and shall not be cracked or have jagged ends or chips that enter the bore of the tubing.

6.4 *Color Coding*—Each capillary tube shall be color coded to identify the tube as coated with heparin or uncoated. Type I, heparin coated, shall have a red band and Type II, uncoated, shall have a blue band. The location of the red or blue band shall be as specified in Fig. 1.

6.5 *Capillarity*—The capillary tube shall be capable of drawing sheep plasma or human whole blood to a level within 20 mm from the far end of the tube when tested as specified in 7.1.

6.6 *Fluidity* (Type I, Heparinized, only)—Coagulation of the sheep plasma or human whole blood shall not be evident when viewed under normal room lighting and tested as specified in 7.2.

6.7 *Lot or Control Number*—A lot or control number shall be indicated on the capillary tube unit container and on the intermediate package of containers. This lot or control number shall be traceable to the origin (raw material purchases) of the manufacturing record.

6.8 *Resistance to Centrifugal Force*— Resistance to capillary tube centrifugal force shall be such that no breakage results when the tubes are tested as specified in 7.4.

6.9 *Heparin Coating* (Type I, Heparinized, only)—The inner surface of Type I capillary tubes shall be evenly coated with ammonium heparin. A minimum of 2.0 units of heparin

[1] This specification is under the jurisdiction of ASTM Committee E-41 on Laboratory Apparatus and is the direct responsibility of Subcommittee E41.01 on Apparatus.
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[2] *Annual Book of ASTM Standards,* Vol 14.04.