Designation: E787 – 81 (Reapproved 2024)

Standard Specification for Disposable Glass Micro Blood Collection Pipets[1]

This standard is issued under the fixed designation E787; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers two dimensionally different disposable glass micropipets used primarily to collect whole human blood specimens for clinical analysis and testing. They are available as coated with heparin or uncoated.

1.2 *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]

E438 Specification for Glasses in Laboratory Apparatus

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *disposable micropipets*—in accordance with this specification and the expected product performance expressed in this standard, those pipets which are to be used one time only. *Any institution or individual who reuses a disposable pipet must bear full responsibility for its safety and effectiveness.*

4. Classification

4.1 This specification covers two dimensionally different disposable glass pipets as follows:

4.1.1 *Short Pipet*—Approximately 75 mm long and coated with heparin (Type I) or uncoated (Type II). These are commercially recognized as Caraway pipets.[3]

4.1.2 *Long Pipet*—Approximately 150 mm long and coated with heparin (Type I) or uncoated (Type II). These are commercially recognized as Natelson pipets.[4]

5. Materials and Manufacture

5.1 *Glass*—The pipets shall be fabricated from borosilicate glass, Type I, Class B, or soda lime glass, Type II, in accordance with Specification E438.

5.2 *Heparin*—shall be the 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 is equal to at least 100 USP units.[5]

6. Physical Requirements

6.1 *Design*—The disposable glass micro blood collection pipets, both short and long, shall be straight and pulled to a tapered point at one end. Any cross section of the pipets, taken in a plane perpendicular to the longitudinal axis, shall be circular. The pipets shall be lightly firepolished at both ends with no run-in and possess color bands to denote presence or absence of heparin content.

6.2 *Dimensions:*

6.2.1 The short Caraway pipet shall be approximately 75 mm long and 4 mm in outside diameter. The pipet shall hold a liquid volume of 310 µL to 470 µL. The tapered point length and tip orifice opening shall be as specified in Fig. 1.

6.2.2 The long Natelson pipet shall be approximately 150 mm long and 3 mm in outside diameter. The pipet shall hold a liquid volume of 220 µL to 420 µL. The tapered point length and tip orifice opening shall be as specified in Fig. 2.

6.3 *Workmanship*—The pipets, as illustrated in Fig. 1 and Fig. 2, shall be free of defects that noticeably detract from their appearance or impair their serviceability. They shall be free of lint, or significant foreign matter, loose or embedded when viewed under normal room lighting. The top and tip ends of the pipets shall be cut at approximately 90° to the pipet axis and shall not be cracked or have jagged ends or chips that enter the bore of the pipet.

[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.

[3] Caraway, W. T., and Fanger, H., "Ultramicro Procedures In Clinical Chemistry," *American Journal of Clinical Pathology* , 25, 1955, pp. 316–331.

[4] Natelson, S., Ph.D., *Micro-Techniques of Clinical Chemistry*, Charles C. Thomas, Springfield, Ill., 1961, p. 70.

[5] *The United States Pharmacopeia*, 19th Revision, pp. 229–230.