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Standard Specification for Pipet, Sahli Hemoglobin[1]

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1. Scope

1.1 This specification covers reusable pipets calibrated "to contain" 20 cmm of whole blood and used for hemoglobin determinations.

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

2. Referenced Documents

2.1 *ASTM Standards:*[2]

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

E1157 Specification for Sampling and Testing of Reusable Laboratory Glassware

3. Materials

3.1 The pipets shall be made of common spirit bore white back tubing or of clear glass with a white stripe applied to the outer surface of the tubing.

4. Design

4.1 *Shape*—Pipets shall be straight and of one-piece construction. Any cross section of a pipet taken in a plane perpendicular to the longitudinal axis should be circular.

4.2 *Delivery Tips*—Delivery tips shall be made with a gradual or concave taper to a length of 10 to 25 mm. The tip end shall be ground and tapered with fine abrasive, or fire-polished. Dimensions of the delivery tip shall be as specified in Fig. 1.

4.3 The top of the pipet shall be ground to a taper or formed to a funnel shape according to the dimensions specified in Fig. 1.

5. Markings

5.1 *Graduation Line*—The pipet shall have one graduation line located 20 cmm from the pipet tip. The graduation line shall be located on the clear portion of the tubing and shall extend at least two thirds around the pipet and not exceed 0.4 mm in width.

5.2 *Volumetric Designation*—The pipet shall be marked 20CMM on the clear portion of the tubing with the markings located approximately 5 mm above the graduation line.

5.3 *Identification*—Each pipet shall be marked with the manufacturer's name or trademark on the white stripe portion of the pipet. Catalog number markings are optional. All markings shall be permanently fused onto the pipet. The markings shall be amber or black in color. When tested in accordance to 6.3, the pigmentation shall not discolor. The appearance of the markings, when viewed by the eye under normal room lighting, shall be the same before and after testing.

5.4 *Capacity Deviation*—Sahli Hemoglobin pipets are made with maximum capacity deviation of ±1.0 % or ±2.0 %. The selected capacity deviation shall be marked on the clear or white stripe portion of the pipet. The capacity of the pipet shall be within the selected capacity deviation marked on the pipet when tested as specified in 6.2.

6. Testing

6.1 *Capacity Test*—The capacity of the pipet shall be determined by means of using distilled water and a weighing device with weight sensitivity not less than 0.001 mg.

6.1.1 The pipet shall be thoroughly cleaned, dried, and allowed to adjust to room temperature.

6.1.2 The pipet shall be weighed and the weight recorded.

6.1.3 The pipet shall be filled to the calibration line with distilled water and weighed, and the weight recorded.

6.1.4 The recorded weight of the clean and dry pipet shall be subtracted from the recorded weight of the distilled water-filled pipet providing the observed volumetric capacity (V_c) of the pipet in grams.

[1] This specification is under the jurisdiction of ASTM Committee E41 on Laboratory Apparatus and is the direct responsibility of Subcommittee E41.01 on Apparatus.

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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.