Designation: E 1093 – 91 (Reapproved 2000)ε1

# Standard Specification for Glass Prothrombin Pipet, Disposable[1]

This standard is issued under the fixed designation E 1093; 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.

ε1 NOTE—Keywords were added editorially in February 2001.

## 1. Scope

1.1 This specification covers a glass disposable Prothrombin pipet suitable for use in micro techniques for estimation of Prothrombin time.

1.2 This precautionary statement pertains only to the test method portion, Section 8, of this specification. *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

2.1 *ASTM Standards:*

E 438 Specification for Glasses in Laboratory Apparatus[2]

2.2 *ISO Standard:*

1769 Laboratory Glassware—Pipettes—Color Coding[3]

## 3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *accuracy*—the expected distribution of mean volumes around the stated volume.

3.1.2 *coefficient of variation*—the expected distribution of individual volumes around the mean volume.

3.1.3 *disposable*—Prothrombin pipets which are intended to be used once only and then discarded.

NOTE 1—Such pipets will only be expected to provide their specified performance during the original operation.

## 4. Classification

4.1 This specification covers only one glass pipet as illustrated in Fig. X1.1.

## 5. Materials and Manufacture

5.1 The pipet shall be made of borosilicate glass, Type 1; Class B, or soda lime glass, Type 2, in accordance with Specification E 438.

## 6. Physical Properties

6.1 *Design*—The Prothrombin pipet shall be made of one piece construction glass tubing that is straight and with uniform bore and lightly firepolished on both ends. The pipet shall be made to the dimensions as specified in Fig. X1.1.

6.2 *Dimensions*—The pipet shall be made of tubing with a minimum outside diameter (o.d.) of 2.3 mm with an inside diameter (i.d.) of 1.7 mm. The uniformity of the bore shall be ±0.05 mm throughout the straight portion of the pipet. The pipet shall be a minimum of 160 mm long.

6.3 *Capacity*—The pipet shall be calibrated "to deliver" (T.D.) 0.1 and 0.2 mL at 20°C. Marking shall be as specified in 6.5.

6.3.1 *Accuracy* (see 3.1)—The accuracy from stated volume shall be ±2.0 % for the 0.1 and 0.2-mL capacity and shall be determined as specified in 8.1.

6.3.2 *Coefficient of Variation* (see 3.2)—The coefficient of variation from stated volume for the 0.1 and 0.2-mL capacity shall not exceed 2.0 % and shall be determined as specified in 8.1.

6.4 *Graduation Lines*—The pipet shall be calibrated and marked with graduation lines at 0.1 and 0.2 mL from the tip of the pipet. The graduation lines shall be 0.3 ± 0.1 mm and shall completely encircle the tube.

6.5 *Pipet Nomenclature*—The pipet shall be marked with 0.1 and 0.2-mL markings slightly above the graduation lines. The pipet may be marked with the inscription T.D. 20°C, or the manufacturer's or vendor's name or trademark, or both.

6.6 *Blow-out Delivery*—The Prothrombin pipet is designed as a dual delivery system for the determinations of coagulation assays. When utilizing the 0.2 mL calibration line, the tip of the pipet should contact the wall of the receiving vessel and allow the pipet to drain freely. The remaining quantity of liquid is to be blown-out into the center of the receiving vessel. When utilizing the 0.1 mL calibration line the contents are to be vigorously blown-out into the center of the receiving vessel

[1] This specification is under the jurisdiction of ASTM Committee E41 on Laboratory Apparatus and is the direct responsibility of Subcommittee E41.07 on Microchemical Apparatus.

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[2] *Annual Book of ASTM Standards*, Vol 14.04.

[3] Available from ISO, 1 Rue de Varembe, Case Postal 56, Crt 1221, Geneva 20, Switzerland.