

Standard Specification for Apparatus For Microdetermination Of Nitrogen By Kjeldahl Method¹

This standard is issued under the fixed designation E 147; 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.

1. Scope

1.1 This specification covers digestion and distillation apparatus used for the microdetermination of nitrogen by the Kjeldahl method, and modifications thereof at atmospheric pressure.

NOTE 1—This specification is based on those originally developed by the Committee on Microchemical Apparatus, Division of Analytical Chemistry, American Chemical Society.²

2. Referenced Documents

2.1 ASTM Standards:

E 124 Specification for Weighing and Drying Apparatus for Microchemical Analysis³

3. Tolerances

3.1 The following commercial length tolerance shall be adhered to, unless otherwise specified:

Up to 10 mm	±1 mm
10 to 100 mm	±2 mm
100 to 200 mm	±3 mm
200 mm	±4 mm

4. Digestion Flasks

4.1 Digestion flasks of three types shall conform to the requirements prescribed in Table 1 and Fig. 1, Fig. 2, and Fig. 3. The flasks shall be made of shock-resistant glass with linear coefficient of expansion not greater than 33.5×10^{-7} cm/cm·°C.

NOTE 2—The weighing tubes described in Specification E 124 Figs. 12, Figs. 13, and Figs. 14, are recommended for introducing solid samples into the micro Kjeldahl digestion flasks. Combustion boats, Fig. 1 and Fig. 2 of Specification E 124, are recommended for use with waxy and nonvolatile liquid samples.

5. Digestion Rack

5.1 The micro Kjeldahl digestion rack shall be portable and

TABLE 1 Digestion Flasks

Capacity, mL	Figure	Use
10	1	with digests of 1 mL or less
30	2	with digests of 1 to 4 mL
30 (Soltys)	3	with digests of 1 to 4 mL when danger of spattering is great.

shall consist of flask heaters (either gas or electric), a flask support, and a fume duct. The rack shall be supplied with a heat deflector mounted under the burners to prevent overheating of the bench top.

5.1.1 *Heaters*—The source of heat may be either electric or gas. In operation, each heater shall supply sufficient heat to a 30-mL flask to cause 15 mL of water at 25°C to come to a rolling boil in not less than 2 or more than 3 min. A device shall be provided for regulating the amount of heat supplied to the

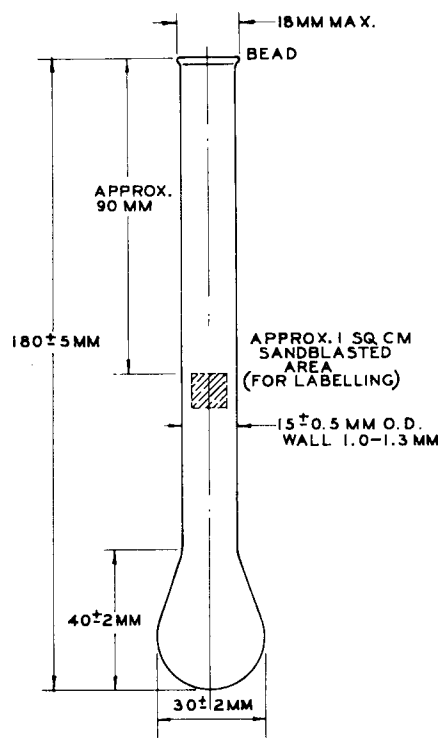


FIG. 1 10-mL Kjeldahl Flask

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

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² Committee on Microchemical Apparatus, "Recommended Specification for Microchemical Apparatus, Micro Kjeldahl Nitrogen," *Analytical Chemistry*, Vol 23, 1951, p. 523.

³ *Annual Book of ASTM Standards*, Vol 14.02.