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Standard Test Method for Nonvolatile Content of Aqueous Adhesives¹

This standard is issued under the fixed designation D1489; 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 Department of Defense. This test method replaces Method 4021 of Federal Test Method Standard No. 175a.

1. Scope

1.1 This test method covers the determination of the nonvolatile content of aqueous adhesives, such as dextrin, starch, casein, and animal gelatin.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *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:*²

D907 [Terminology of Adhesives](#)

3. Terminology

3.1 *Definitions*—Many terms in this test method are defined in Terminology D907.

4. Significance and Use

4.1 Adhesive cost is often related to the solids level (nonvolatile content).

4.2 This test method can be used to compare the nonvolatile content of various adhesives for adhesive selection and product uniformity.

4.3 This test method is suitable for quality control and research purposes.

5. Apparatus and Materials

5.1 *Analytical Balance*, equipped with Class S weights or better, having a 200-g capacity, and accurate to ± 0.001 g. For the initial weighing of the wet specimen, a laboratory balance having a capacity of 200 g and accurate to ± 0.01 g may be used., for weighing of specimen, accurate to ± 0.001 g.

5.2 *Laboratory Balance*, for weighing of sample, accurate to ± 0.01 g.

5.3 *Constant-Temperature Oven*, capable of maintaining a temperature of $105 \pm 1^\circ\text{C}$ ($221 \pm 2^\circ\text{F}$).

5.3 *Weighing Bottles*—Wide-mouth cylindrical glass weighing bottles, of flat form, about 30 mm in height and 50 mm in diameter, having interchangeable ground-in glass caps.

5.4 *Glass Jar* of sufficient size, 1 L or more, to store sample of adhesive prior to testing. The jar shall be such that it can be sealed to prevent the loss of volatile content during the storage period.

5.5 *Beaker*—of 100 mL capacity.

5.6 *Weighing Bottles*—wide-mouth cylindrical glass weighing bottles, of flat form, about 30 mm in height and 50 mm in diameter, having interchangeable ground-in glass caps.

5.7 *Volumetric Flasks*, of 200-mL capacity, with glass stoppers.

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5.8 *Volumetric Pipet*, of 10-mL capacity.

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¹ This test method is under the jurisdiction of ASTM Committee D14 on Adhesives and is the direct responsibility of Subcommittee D14.10 on Working Properties. Current edition approved April Dec. 1, 2004-2009. Published April 2004-January 2010. Originally approved in 1957. Last previous edition approved in 1997-2004 as D1489 – 97 (2004). DOI: 10.1520/D1489-97R04.10.1520/D1489-09.

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.