



Designation: D1579 – 01 (Reapproved 2013)

Standard Test Method for Filler Content of Phenol, Resorcinol, and Melamine Adhesives¹

This standard is issued under the fixed designation D1579; 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, as part of Federal Test Method Standard No. 175a.

1. Scope

1.1 This test method is suitable for measuring the filler content of phenol, resorcinol, and melamine resin-base adhesives mixed with hardener or catalyst, that set at room, intermediate, and high temperatures. Results are expressed on the basis of the nonvolatile content of the mixed, liquid adhesive.

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

D1582 Test Method for Nonvolatile Content of Liquid Phenol, Resorcinol, and Melamine Adhesives

3. Terminology

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

4. Significance and Use

4.1 It is possible to modify the properties of phenol, resorcinol, and melamine-based adhesives by adding fillers to the adhesive and in doing so affect the way the adhesive

performs. This test method makes possible accurate determination of these filler levels for purposes of quality control and characterization of the adhesive.

5. Apparatus

5.1 *Erlenmeyer Flask*, or beaker, of 100-mL capacity.

5.2 *Analytical Balance*, accurate to 0.001 g.

5.3 *Circulating-Air Oven*, capable of maintaining a temperature of $105 \pm 1^\circ\text{C}$ ($221 \pm 1.8^\circ\text{F}$).

5.4 *Desiccator*, with drying agent and tray.

5.5 *Sintered Glass Crucible*, of coarse or medium porosity.

6. Sampling

6.1 Except in special cases, take a sample from each component of the adhesive. When possible, use a composite sample of each component chosen from three or more separate containers, chosen at random. Also take samples from containers which appear to be nonrepresentative and test such samples separately. Place the samples immediately in clean, dry, airtight containers, filled to prevent excessive air space above the adhesive and transported to the testing laboratory. Take precautions to reduce evaporation or drying of the adhesive to a minimum. Mix the adhesive in the can thoroughly if there is a tendency for the materials to separate before a sample is taken.

6.2 Test three specimens of each sample, unless otherwise required.

7. Procedure

7.1 Mix the adhesive in accordance with the instructions of the manufacturer.

7.2 *Phenol and Resorcinol Base*—Accurately weigh to the nearest 1 mg approximately 2 g of the freshly mixed adhesive (cut film adhesives into small pieces approximately 13-mm (0.5-in) square before weighing) in a 100-mL beaker or Erlenmeyer flask, add 50-mL of absolute methyl alcohol, and stir the mixture thoroughly for 3 min. Filter the mixture promptly through a previously weighed, sintered glass crucible of coarse or medium porosity and wash the contents of the

¹ This test method is under the jurisdiction of ASTM Committee D14 on Adhesives and is the direct responsibility of Subcommittee D14.30 on Wood Adhesives.

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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.