



Designation: D1874 – 62(Reapproved 2010)

# Standard Specification for Water- or Solvent-Soluble Liquid Adhesives for Automatic Machine Sealing of Top Flaps of Fiberboard Shipping Cases<sup>1</sup>

This standard is issued under the fixed designation D1874; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This specification covers starch, dextrin, casein, resin base, and other liquid adhesives (excepting pressure-sensitive types) used for sealing the top flaps of fiberboard shipping cases. It includes provisions for adhesive selection based on: (1) satisfactory machining characteristics on specific equipment, and (2) adequate adhesion under specified storage conditions. This specification further provides for the control of uniformity between lots of an adhesive selected on the above bases by limiting variations in nonvolatile content and viscosity.

1.2 This specification provides bases for adhesive selection as well as product uniformity control. Test methods are specified for measuring (1) nonvolatile content, (2) consistency, and (3) bonding permanency under specified storage conditions.

1.3 The values stated in acceptable metric units are to be regarded as the standard. The values given in parentheses are provided for information purposes only.

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

[D907 Terminology of Adhesives](#)

[D1084 Test Methods for Viscosity of Adhesives](#)

[D1489 Test Method for Nonvolatile Content of Aqueous Adhesives](#)

[D1581 Method of Test for Bonding Permanency of Water- or Solvent-Soluble Liquid Adhesives for Labeling Glass Bottles \(Withdrawn 1991\)](#)<sup>3</sup>

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D10 on Packaging and is the direct responsibility of Subcommittee D10.14 on Tape and Labels.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

[D1714 Test Method for Water Absorptiveness of Fiberboard Specimens for Adhesives \(Withdrawn 1990\)](#)<sup>3</sup>

## 3. Terminology

3.1 Many terms in this specification are defined in Terminology [D907](#).

## 4. Physical Properties

4.1 The general consistency shall be uniform, and the adhesive shall be free of lumps and particles.

4.2 The machining properties shall be such that the adhesive (when diluted in accordance with to the manufacturer's instructions) shall not string when machine transfer surfaces are separated, shall not build up excessively on machine parts, and shall not foam.

4.3 The bonding permanency of the adhesive shall provide a minimum of 75 % paper fiber tear when tested under the exposure conditions specified in the contract or purchase order. The exposure conditions shall be selected from those in Table 1 of Test Method [D1581](#).

## 5. Permissible Variations

5.1 The nonvolatile content of the adhesive shall be within  $\pm 1.5$  % of that specified in the contract or purchase order.

5.2 The consistency of the adhesive shall be within  $\pm 20$  % of that specified in the contract or purchase order.

## 6. Sampling

6.1 The adhesive sample shall be a 0.9-L (1-qt) aliquot consisting of a composite taken when possible from three or more separate containers chosen at random. Samples also shall be taken from containers that appear to be nonrepresentative and shall be tested separately. Before a sample is withdrawn, mix the contents in the container to uniform consistency. Place the sample immediately in an airtight glass jar until tested.

6.2 Samples of adhesives used on fiberboard cases shall be of the same type used on the production line. Samples of boards used for all bonding permanency tests shall be within a defined range of water absorptiveness to eliminate this variable