



Designation: D 1581 – 60 (Reapproved 1984)

Standard Test Method for BONDING PERMANENCY OF WATER- OR SOLVENT- SOLUBLE LIQUID ADHESIVES FOR LABELING GLASS BOTTLES¹

This standard is issued under the fixed designation D 1581; 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 method covers the determination of the bonding permanency of dextrin, casein, starch, animal gelatin, and other liquid adhesives (excluding pressure-sensitive types) used for applying printed paper labels to glass bottles.

1.2 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Applicable Documents

2.1 ASTM Standard:

D 1584 Test Method for Water Absorptiveness of Paper Labels²

3. Apparatus

3.1 *Film Applicator*, tube or rod type to give a wet film thickness of 0.025 to 0.038 mm (0.001 to 0.0015 in.).

3.2 *Glass Plates* of smooth plate glass, size suitable for label specimens.

3.3 *Cabinets or Desiccators* with means of controlling the temperature and relative humidity as the conditions listed in Table 1.

3.4 *Desiccants*, such as Anhydron (anhydrous magnesium perchlorate) or Drierite (indicating calcium sulfate) for conditions of 22 to 38°C, and dry or low relative humidity.

3.5 Saturated Salt Solutions:

3.5.1 Ammonium monophosphate for con-

ditions of 22 to 38°C and 91 to 93 % relative humidity.

3.5.2 Potassium sulfate for conditions of 30°C and 96 to 97 % relative humidity.

3.5.3 Lithium chloride for conditions of 22 to 38°C and 11 % relative humidity.

4. Sampling

4.1 The adhesive sample shall be a 0.9 litre (1-qt) aliquot consisting of a composite taken, when possible, from three or more separate containers chosen at random. Also take samples from containers which appear to be nonrepresentative and test separately. Before a sample is withdrawn, mix the adhesives to uniform consistency. Immediately place the sample in an air-tight glass jar until ready for testing.

5. Procedure

5.1 Use only those labels within the selected range of water absorptiveness for each test (Notes 1 and 2). Select from Table 1 those exposures which the package may encounter after shipment. The purchaser and the manufacturer should agree on the test exposures to be used. Prepare three test specimens for each test exposure selected. Apply a uniform adhesive film on a clean glass plate to give a wet film thickness of 0.025 to 0.038 mm (0.001 to 0.0015 in.). Press the label down firmly and store the adhered unit at room temperature and

¹ This method is under the jurisdiction of ASTM Committee D-14 on Adhesives.

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² *Annual Book of ASTM Standards*, Vol 15.06.