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AMERICAN SOCIETY FOR TESTING AND MATERIALS

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Standard Test Methods for EFFECT OF BACTERIAL CONTAMINATION ON PERMANENCE OF ADHESIVE PREPARATIONS AND ADHESIVES FILMS¹

This standard is issued under the fixed designation D 4299; 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 These test methods cover the determination of the effect of bacterial contamination on the permanency of:

1.1.1 *Adhesive Preparations*, by determining the comparative viscosities and observing the appearance of the uncontaminated and the contaminated adhesives when tested under defined conditions, and

1.1.2 *Adhesive Films*, by exposure to cultures of selected species of bacteria growing on agar plates.

1.2 The test methods are not appropriate for all adhesives. The presence of certain biocides might yield false negative tests as a result of irreversible reaction with the medium constituents. Also, the efficacy of some biocides may change in storage due to the chemical and thermal environment to which they are subjected as components of certain adhesives. These test methods also are not designed to cover the possibility of water soluble biocides leaching out of the glue line, so they are not appropriate for determining the effect of mold contamination on adhesives under water-soaking conditions.

1.3 *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.* Specific precautionary statements are given in Section 7.

2. Applicable Documents

2.1 ASTM Standards:

D 1174 Test Method for Effect of Bacterial Contamination on Permanence of Adhesive Preparations and Adhesive Bonds²

E 1 Specification for ASTM Thermometers³

2.2 *TAPPI Method:*

T 487 Fungus Resistance for Paper and Paperboard⁴

3. Description of Terms Specific to This Standard

3.1 *adhesive preparation*—the adhesive in liquid form as supplied to the customer.

3.2 *adhesive film*—the small portion of the adhesive prepared for use, which is spread in a thin layer on the sensitivity disks as described in 14.2.1.1, or the adhesive layer, 1/8-in. (3-mm) thick, which is cast on the tile squares as described in 14.3.1.1.

4. Significance and Use

4.1 The test for the resistance of adhesive preparations to bacterial contamination (Section 13) is used to determine susceptibility of the adhesive to biodegradation. This method is useful in demonstrating whether an adhesive preparation is sufficiently protected with biocide to resist attack by bacteria during its shelf life. It depends on changes in viscosity and physical appearance of the adhesive to provide indications of inade-

¹ These test methods are under the jurisdiction of ASTM Committee D-14 on Adhesives and are the direct responsibility of Subcommittee D14.20 on Durability.

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² Discontinued, see 1983 *Annual Book of ASTM Standards*, Vol 15.06.

³ *Annual Book of ASTM Standards*, Vol 14.01.

⁴ Available from TAPPI, P.O. Box 105113, Atlanta, GA 30348.