



Designation: D 3611 – 89 (Reapproved 2003)

Standard Practice for Accelerated Aging of Pressure-Sensitive Tapes¹

This standard is issued under the fixed designation D 3611; 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 approval. 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.

1. Scope

1.1 This practice provides one environment in which to expose finished pressure-sensitive tape material for the purpose of accelerating the aging of it. It is applicable to tape in roll form when the user observes the precautions detailed within the procedure. The practice does not provide for a conclusion within itself, but is for use in conjunction with appearance or physical property tests to follow the accelerated exposure. While this practice was developed using packaging type tapes, its use on other types of tape with similar construction is encouraged. It is not intended for use on electrical grade tapes (see Test Methods D 1000).

1.2 *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:

- D 996 Terminology of Packaging and Distribution Environments²
- D 1000 Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications³
- D 3330/D 3330M Test Methods for Peel Adhesion of Pressure-Sensitive Tape at 180° Angle²
- D 3715/D 3715M Practice for Quality Assurance of Pressure-Sensitive Tapes²
- D 4332 Practice for Conditioning Containers, Packages, or Packaging Components for Testing²

3. Terminology

3.1 Terminology found in Terminology D 996 shall apply.

¹ This practice is under the jurisdiction of ASTM Committee D10 on Packaging and is the direct responsibility of Subcommittee D10.14 on Closure and Reinforcement.

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² *Annual Book of ASTM Standards*, Vol 15.09.

³ *Annual Book of ASTM Standards*, Vol 10.01.

4. Summary of Practice

4.1 The pressure-sensitive tape is exposed to an atmosphere of 80 % relative humidity at 150°F (66°C) for a period of 96 h. Following a period for returning to a standard atmosphere, the tape is ready for a prescribed examination using a method such as Test Methods D 3330/D 3330M.

5. Significance and Use

5.1 This practice accelerates the natural aging of pressure-sensitive tapes so that the response to the usual physical property tests changes to the same extent as with an exposure to at least 2 years of natural aging when compared with the response to tests before aging.

5.1.1 Natural aging in this context means a continuous period of aging of tape in a closed fibreboard container (in darkness) in the variable climate of either the warm moist south, the warm dry southwest or the moderate midcontinent, USA.

5.2 The extent of change for one physical property should be expected to be different than for another property and so would also relate to different natural aging time.

5.3 An abnormal product lot may cause differences in testing response that throw off the expected time patterns.

5.4 Appearance of normal tape product will usually change only slightly on two years natural aging. This accelerated exposure usually produces an exaggerated change in appearance which would be seen under natural conditions only in abnormal product.

5.5 There is no present experience to relate this accelerated exposure to responses of tape in applications where the tape is under a use stress.

6. Interferences

6.1 The environment for this practice cannot occur unless the vessel used as the environment container is vented so that pressure differences between the inside and the outside of the vessel can be balanced.

6.2 The environment in the vessel is dependent on careful observation of the requirements of loading in relationship to vessel volume and liquid surface area in accordance with Section 7.