This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

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Standard Practice for Conditioning and Testing Flexible Barrier Packaging[1]

This standard is issued under the fixed designation E171/E171M; 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 practice defines the standard temperature and humidity for conditioning and testing of flexible barrier packaging and flexible barrier packaging materials at nominally ambient conditions.

1.2 There are many other temperature and humidity conditions that may be appropriately used to test end use conditions (such as freezer, refrigerated, or abusive storage). These need to be individually established and are not in the scope of this practice.

1.3 Only those materials that fall under the general area of flexible barrier packaging materials are included in this practice.

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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2. Referenced Documents

2.1 *ASTM Standards:*[2]

D4332 Practice for Conditioning Containers, Packages, or Packaging Components for Testing

F17 Terminology Relating to Primary Barrier Packaging

F2825 Practice for Climatic Stressing of Packaging Systems for Single Parcel Delivery

3. Terminology

3.1 *conditioning*—the exposure of a material to the influence of a prescribed atmosphere for a stipulated period of time or until a stipulated relation is reached between material and atmosphere.

3.2 Terms and definitions used in this practice may be found in Terminology F17.

4. Significance and Use

4.1 Conditioning is used to minimize the variation in test results that may result from fluctuations in temperature and humidity, or both. Many flexible packaging materials or components of flexible packaging materials, particularly materials that are hygroscopic, undergo changes in physical properties as the temperature and the relative humidity (RH) to which they are exposed are varied.

4.2 Many packaging materials do not exhibit a meaningful change in physical properties across the temperature and humidity range that is generally found in office and general laboratory settings. As a result, conditioning of samples is often not required in order to achieve useful test results and is often bypassed during routine testing.

4.3 Conditioning should be considered when *(a)* comparing between or among laboratory results (for example, supplier and customer), *(b)* temperature or humidity is anticipated to have an effect on the test outcomes, or *(c)* potential sources of variation in test results must be minimized.

4.4 Temperature and humidity alone are not sufficient to completely define a storage condition. Many other factors may be relevant (such as time, light, and atmospheric pressure) that are not defined in this specification.

5. Atmospheric Conditions

5.1 Condition and test materials as follows:

Temperature:	23 ± 2°C [73 ± 4°F]
Humidity:	50 ± 5 % RH
Conditioning Time :	24 h minimum

5.2 *Special Atmospheres*—If special atmospheres are required, see Practice D4332 for guidance on temperature and relative humidity associated with specific environmental conditions. A conditioning time of 24 h minimum at the special atmosphere shall be used unless circumstances suggest another

[1] This practice is under the jurisdiction of ASTM Committee F02 on Flexible Barrier Packaging and is the direct responsibility of Subcommittee F02.50 on Package Design and Development.

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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.

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time may be more appropriate. The special atmospheres listed in Practice D4332 are not intended to be performed in sequence. Practice F2825 provides guidance on climatic stressing protocols.

6. Keywords

6.1 conditioning; conditions; flexible packaging; flexible barrier packaging; materials; package

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