



Standard Test Method for Odor or Flavor Transfer or Both from Rigid Polymeric Packaging¹

This standard is issued under the fixed designation E2609; 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 test method covers a recommended procedure for examining odor or flavor properties or both of rigid polymeric packaging closures and fillable materials.

1.2 This test method can be used for single materials or coextruded materials that are foam molded, injection molded, blow molded, compression molded, or thermoformed polymers.

1.3 The focus of this test method is the evaluation of molded polymer in terms of the transfer of package-related odors, flavors, or both, to water and other model systems (bland food simulants). Rigid packaging forms vary considerably in type, size, and shape. Thus, customizing the exact procedure for dealing with the physical requirements for individual packages is the responsibility of the user.

1.4 This test method assumes testing of the materials at a one-time point; shelf-life testing is not included.

1.5 Refer to Test Method E1870 for the evaluation of inherent odor of packaging material by confinement tests.

1.6 This test method provides sample preparation procedures and two methods of evaluation.

1.6.1 The package performance score method allows for the comparison of any molded polymer sample to another.

1.6.2 The ranking method allows for comparison of samples within the currently tested set only.

1.6.3 The preparation of samples is consistent regardless of the method of evaluation used.

1.7 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.8 *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*:²

D1292 Test Method for Odor in Water

E253 Terminology Relating to Sensory Evaluation of Materials and Products

E460 Practice for Determining Effect of Packaging on Food and Beverage Products During Storage

E619 Practice for Evaluating Foreign Odors in Paper Packaging

E1870 Test Method for Odor and Taste Transfer from Polymeric Packaging Film

3. Terminology

3.1 *Definitions*—For definitions of terms relating to sensory analysis, see Terminology E253.

3.2 *Definitions of Terms Specific to This Standard*:

3.2.1 *blow molding, v*—process of producing a hollow polymeric part by introducing air into a parisen.

3.2.2 *compression molding, v*—process of compressing polymer between two heated platens, using the heat and pressure to produce a flat sample.

3.2.3 *coextruded packaging, n*—two or more layers of resin extruded simultaneously and these layers may be different resins or the same resin.

3.2.4 *direct contact, n*—packaging material in physical contact with test medium.

3.2.5 *foam molding, v*—process of producing rigid forms by expanding foam in a closed mold using steam.

3.2.6 *injection molding, v*—process of forcing molten polymer into a mold.

3.2.7 *monolayer packaging, n*—packaging consisting of a single layer of material or resin.

¹ This test method is under the jurisdiction of ASTM Committee E18 on Sensory Evaluation and is the direct responsibility of Subcommittee E18.05 on Sensory Applications—General.

Current edition approved April 1, 2016. Published April 2016. Originally approved in 2008. Last previous edition approved in 2008 as E2609 – 08. DOI: 10.1520/E2609-08R16.

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.