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Standard Test Method for Proper Resecuring of Type I (Continuous Thread) Child-Resistant Closures¹

This standard is issued under the fixed designation D 4760; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

INTRODUCTION

The integrity of child-resistant closures frequently is affected by the resealing characteristics of these closures by the consumer. Different closures may have different resealing requirements. For this reason this test method is limited to continuous thread child-resistant closures. The purpose of this test method is to establish a framework for the definition and standards for "properly resealed" continuous thread child-resistant closures.

1. Scope

1.1 This test method determines the proper resealing of continuous thread child-resistant closures.

1.2 The values stated in SI units are to be regarded as the standard. The inch-pound units given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety problems, 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 3198 Test Method for Application and Removal Torque of Threaded or Lug-Style Closures²

D 3474 Practice for the Calibration and Use of Torque Meters Used in Packaging Applications²

D 3475 Classification of Child-Resistant Packages²

D 3810 Test Method for Minimum Application Torque of Type IA Child-Resistant Closures²

2.2 Federal Standards:

Poison Prevention Packaging Act of 1970 Regulations, Part 1700—Poison Prevention Packaging Standards³

3. Terminology

3.1 Description of Term Specific to This Standard:

3.1.1 *proper resealing*—the reapplication of a closure to a container, after its *normal* removal, in such a manner that the package remains child-resistant.

4. Summary of Test Method

4.1 Representative specimens of preconditioned packages

with continuous thread child-resistant closures are opened and reclosed by a panel of adults. Removal torque of the reapplied closures is measured and the values are plotted on a graph.

4.2 Following the procedures in Test Method D 3198, closures are applied to unused containers at varying torques and removal torque is measured.

4.3 Application torque in 4.2 resulting in the minimum removal torque achieved by 90 % of the adult panel in 4.1 is then determined.

4.4 Packages, with closures applied at this torque value from 4.3, are submitted to child protocol testing.

5. Significance and Use

5.1 This method defines "proper resealing" of child-resistant closures in objective, scientific terms.

5.2 It furnishes realistic, measurable values for one aspect of the testing procedure for special packaging as detailed in the Poison Prevention Packaging Act, Part 1700.20.

5.3 It can be used to establish a performance standard for the specific package tested.

6. Apparatus

6.1 *Torque Meter*,^{4,5} as specified in Test Method D 3198.

7. Sampling

7.1 Randomly select 175 sample packages representative of the closures and containers to be tested in 9.1 and 9.2.1.

7.1.1 The 175 sample packages may be either taken directly from a packager's production line or finished goods storage or may be 175 unused closures and containers.

¹ This test method is under the jurisdiction of ASTM Committee D-10 on Packaging and is the direct responsibility of Subcommittee D10.31 on Child Resistant Packaging.

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² Annual Book of ASTM Standards, Vol 15.09.

³ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

⁴ Owens-Illinois torque meters, or their equivalent, have been found satisfactory for this test method. Available from Secure-Pak, Inc., 4009 Beachway Blvd., Toledo, OH 43614.

⁵ A digital or automated torque instrument, if used, will have an appropriate design and scale capacity for the container/closure system to be evaluated. Torque results will be available in either electronic display or printout format.