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Standard Test Method for BASIC STABILITY OF A MECHANICAL PUMP DISPENSER AND PRODUCT¹

This standard is issued under the fixed designation D 4353; 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 the determination of the basic stability of a mechanical pump dispenser and product.

1.2 This test method covers accelerated usage evaluations of mechanical pump dispensers and product; simulated storage evaluations of mechanical pump dispensers, and product; and chemical compatibility of the individual components of mechanical pump dispensers and product.

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 precautions are given in Section 5.

2. Applicable Documents

2.1 ASTM Standards:

D4041 Method for Determining Spray Patterns of Manually Operated Pump Dispensers²

D4332 Practice for Conditioning Containers, Packages, or Packaging Components for Testing²

E 122 Recommended Practice for Choice of Sample Size to Estimate the Average Quality of a Lot or Process³

3. Significance and Use

3.1 Determining the accelerated usage, simulated storage, and chemical compatibility of mechanical pump dispensers and product is neces-

sary in order to determine the acceptability of a mechanical pump dispenser for consumer usage.

4. Apparatus

4.1 *Containers*, that will allow the mechanical pump dispenser to be affixed to them (Note 1) and also be capable of containing product for a period of time at various environmental conditions (Note 2). A minimum of 46 is recommended.

NOTE 1—If possible, the actual container to be marketed should be used.

NOTE 2—The number of containers is arbitrary and can be changed according to need.

4.2 *Glass Containers and Closures*, capable of containing product and a disassembled mechanical pump dispenser. Also, the glass container and closure must be capable of effecting a sealed unit and not be reactive with the product at various environmental conditions (Note 3). A minimum of 10 containers is recommended.

NOTE 3—The number of glass containers and closures is arbitrary and can be changed according to need.

4.3 *Product*, sufficient amount to fill 46 containers in accordance with 4.1, and 10 glass containers in accordance with 4.2.

4.4 *Stereo/Zoom Microscope*, capable of magnification up through 30X, and preferably with a camera attached for permanent record keeping.

4.5 *Environments*, where the mechanical

¹ This test method is under the jurisdiction of ASTM Committee D-10 on Packaging and is the direct responsibility of Subcommittee D10.32 on Consumer Packages.

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

³ *Annual Book of ASTM Standards*, Vol 14.02.