Designation: D 3069 – 94 (Reapproved 1999)ε1

Standard Test Method for Delivery Rate of Aerosol Products[1]

This standard is issued under the fixed designation D 3069; 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.

This standard has been approved for use by agencies of the Department of Defense.

ε[1] NOTE—Keywords were added editorially in October 1999.

1. Scope

1.1 This test method covers the determination of delivery rate of aerosol products.

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 Environments[2]

3. Terminology

3.1 General definitions for packaging and distribution environments are found in Terminology D 996.

4. Summary of Test Method

4.1 The delivery rate of an aerosol dispenser is determined by measuring the quantity of material expelled through the valve in a given time. The exact duration of discharge and the temperature of the dispenser must be carefully controlled for good reproducibility.

4.2 Biological and clinical tests are often made with one or two dispensers selected from a group that is similar in all respects, with the exception of delivery rate. When it is desirable to select dispensers with equal delivery rates, three tests should be performed on each dispenser.

4.3 In the case of storage tests, a single delivery rate test is normally performed at each examination period to conserve the contents and extend the life of the dispenser.

5. Significance and Use

5.1 Delivery rate tests assist in evaluating one aspect of valve performance, and are considered as a prerequisite to both biological and storage testing.

6. Apparatus

6.1 *Water Bath*, maintained at 70 ± 0.5°F ((21 ± 0.25°C) (80 ± 0.5°F (26 ± 0.25°C) for insecticides), to match Peet-Grady test requirements), with a screen or perforated metal shelf 1 in. (25 mm) above the bottom of the bath.

6.2 *Stirrer*, air or electric.

6.3 *Balance*, 0.1-g scale.

6.4 *Stop Watch or Electric Timer*.

7. Sampling

7.1 Normal production or laboratory samples shall be used for this test.

8. Test Specimen

8.1 Remove the protective cover, paper label, and all other detachable materials from the dispenser, with the exception of the button or actuator.

8.2 If a foam spout is used, remove the spout, cut away all nonessential plastic, and then replace the spout.

9. Procedure

9.1 Activate the valve for a few seconds, then remove any valve cup impingements, and weigh the dispenser to the nearest 0.05 g.

9.2 Place the dispenser on the shelf in the water bath, which is maintained at the test temperature of 70 ± 0.1°F (21 ± 0.05°C). Keep the dispenser in an upright position, spaced 1 in. (25 mm) apart, and covered with 1 in. of water.

[1] This test method is under the jurisdiction of ASTM Committee D10 on Packaging and is the direct responsibility of Subcommittee D10.33 on Mechanical Dispensers. Originally developed by the Chemical Specialties Manufacturers Assn.

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