U. S. Department of Commerce
National Bureau of Standards

CHECKING PACKAGED AEROSOL PRODUCTS, LOW VISCOSITY

A Supplement to

National Bureau of Standards Handbook 67

Checking Prepackaged Commodities

Issued February 23, 1965

(Prepared by the Office of Weights and Measures)

CHECKING PACKAGED AEROSOL PRODUCTS, LOW VISCOSITY

This procedure covers the checking of low viscosity type aerosol packaged products (see attached list for examples) and has been prepared as an addition to the package checking procedures presented in National Bureau of Standards Handbook 67.* Reference to other procedures are those contained in Handbook 67.

The step-by-step procedure set forth below has been developed as a parallel to Steps 1 through 5 on page 11 of Handbook 67 which are directed to conventional standard-pack packages.

Standard-Pack Packages, Aerosol Products (Low Viscosity)

(Low viscosity packaged aerosol products should be checked at a temperature between 70° to 80°F. The fumes released when emptying the containers may be toxic and/or flammable. The exhausting procedure should be conducted in a well-ventilated area or outdoors. No smoking should be permitted in the test area. The containers should not be punctured or subjected to temperatures in excess of 110°F.)

Step 1. --Select a sample of 10 or more identical packages (identical as to labeled weight, brand, and commodity.) Remove any overcaps not required for dispensing the product.

Step 2. --Check the gross weight of each package to determine the lightest and heaviest package in the sample. Record the gross weight of the lightest and heaviest package.

Step 3. --Following instructions on the container, prepare the lightest package for the checking procedure. If shaking is specified the shaking should be done according to the directions on the container. If no directions as to how the can should be shaken are given, shake the container with a wrist-twisting motion for 15 seconds at the approximate rate of one complete cycle per second.

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* Copies of Handbook 67 are available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402, at 35 cents per copy. (Remittance must accompany order. Postage stamps not acceptable.)

Step 4. --Exhaust the lightest container by holding the valve-actuator depressed until no additional product or gas is expelled. During this exhausting procedure the container should be held in the proper position (generally upright) as specified in the instructions on the package. (A lightweight, portable, test stand equipped with an adjustable valve-actuator depressor may be used for this operation. See Figure 1.) If any product remains, this should be expelled as completely as possible by holding the container in the hand with the valve-actuator depressed and alternately inverting the container and then restoring to the original test position at approximately ten second intervals until no additional product is delivered. In cases where the can becomes chilled during the initial exhausting period, it is very important to hold the can in the hand during the inverting procedure or permit the container to warm up to 70° to 80° F before concluding the evacuation with the inverting procedure.

A container with a metered valve cannot be emptied by holding the valve-actuator depressed. (A metered valve is defined as a valve that permits only a predetermined amount of product to be expelled each time the valve-actuator is depressed.) The container will have to be emptied by alternately depressing and releasing the valve-actuator by hand until no additional product or gas is expelled.

Step 5. --Rinse and dry the exterior of the container. (If the valve-actuator is removable, remove for cleaning and drying, and then replace.)

Step 6. --Weigh the empty container to determine the wet tare. (The wet tare is defined as the weight of the container plus any product that is not expelled during the exhausting procedure.)

Step 7. --Determine the test allowance by reference to the following table. (The test allowance is defined as the difference in the amount of product delivered through normal consumer usage and the amount of the product delivered through the procedure outlined in Step 4, as determined by laboratory investigation.)

Labeled Weight of Package	Test Allowance	
	Fractional	Decimal
Zero to less than 1 1/2 oz.	Zero	Zero
1 1/2 oz. to less than 3 oz.	1/16 oz.	0.06
3 oz. or higher	2/16 oz.	0.13

Step 8. --Subtract the test allowance from the wet tare to obtain the corrected wet tare.

Step 9.--Subtract the corrected wet tare from the gross weight to obtain the adjusted net weight of the lightest package.

Step 10. --If the adjusted net weight of the lightest package at least equals the declared net weight it may be reasonable to assume that the lot is satisfactory.

Step 11. --If the adjusted net weight of the lightest package is less than the declared weight it will be necessary to treat the 10 packages as a sample of the lot and proceed to weigh them individually to determine individual errors. For this procedure it will be essential to arrive at an average corrected wet tare weight to be added to the labeled net weight of the package to determine a "standard" gross weight with which the packages will be compared.

In order to arrive at a representative average corrected wet tare weight for the sample, Steps 3 through 8 must be repeated with the heaviest package to obtain its corrected wet tare weight. The average of the two corrected wet tare weights may then be accepted as the tare weight for the weighing of individual packages. In rounding off this average always round off to the lower figure (i.e., the average of 2 10/16 oz. and 2 11/16 oz. is 2 10/16 oz.). (The inspector is cautioned that the tare of a single package is not considered acceptable as an average corrected wet tare, and also that no "permanent" or "reference" record of tares is acceptably reliable.)

Step 12. --With standard weights in an amount equal to the "standard" gross weight for the sample packages on one side of the scale (or as the "standard" gross weight in the "substitution" procedure if an equal-arm scale is not used), weigh the remaining packages of the sample and record the error of all sample packages. Exclude, by circling, any errors (±) that are unreasonably large and determine an average error for the sample (see Steps 1, 2, 3, 4, and 5 of 8.1., NBS Handbook 67.)

Fig. 1. A light weight portable test stand with an adjustable valve-actuator depressor. (Component list, assembly, and operation described on the facing page.)

The light weight portable test stand with the adjustable valve-actuator depressor may be assembled easily. The major components are available from any scientific supply company. The components and the approximate cost are as follows:

Item	Approximate Cost
Support Stand	$2.00
Utility Clamp	1.75
Carriage Bolt (1/2 in., 2-3 in. long) and Nut	.10
	$3.85

In the assembly of the stand, the carriage bolt is threaded into the nut and the nut is gripped tightly by the rubber covered jaws of the clamp. The clamp is then mounted on the rod of the support stand.

In the operation of the stand, the height of the clamp is adjusted to the height of the container under test and the final valve-depressing adjustment made by turning down the carriage bolt until maximum flow of product is obtained.

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EXAMPLES OF LOW-VISCOSITY AEROSOL PRODUCTS

Hair Sprays
Colognes
Window Cleaners
Starches and Material Finishes
Insecticides
Room Deodorants
Deodorants (personal)
Waterproofers
Mothproofers
Antiseptics and Medicants
De-icers
Ignition Spray
Insect Repellant
Furniture Polish
Dog and Pet Sprays
Oil Spray
Battery Cleaner
Shoe Polishes and Leather Conditioners
Wall Cleaner
Suntan Lotion
Spray-on Bandage
Run-stoppers
Pre-shave Lotion
Neomycin Spray
Nasal Relief Spray
External Analgesics
Charcoal Lighters
Fire Extinguisher
Anti-static Spray
Carburetor Cleaners
Plant Food
Auto Quick Start Sprays
Whitewall Tire Cleaner