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Standard Practice for Carbon Black—Sampling Packaged Shipments[1]

This standard is issued under the fixed designation D 1799; 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 practice covers the sampling of bagged, cartoned, or otherwise packaged shipments of carbon blacks.

NOTE 1—The tests to be made on the samples obtained by this practice shall be determined by the producer and the consumer. The specific details of each test method are described in appropriate ASTM methods used for testing carbon black.

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

1.3 *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:*

E 105 Practice for Probability Sampling of Materials[2]

E 122 Practice for Choice of Sample Size to Estimate a Measure of Quality for a Lot or Process[2]

3. Significance and Use

3.1 This practice is for use in obtaining representative samples of carbon black from the packages in the shipment. These samples are used to determine the average quality or variability of the shipment.

4. Apparatus

4.1 *Sample Splitter*, riffle-type.

4.2 *Sample Containers*, airtight, 4 dm^3 (1-gal) capacity.

4.3 *Scoop*, sample.

4.4 *Sampling Device*, see Fig. 1.

5. General

5.1 Packaged shipments of carbon blacks generally consist of 11.35 and 22.7-kg (25 and 50-lb) packages. These packages are loaded into rail cars or vans in definite patterns agreed upon by the producer and the consumer. These may be in the form of unit loads, stacks, or may be loaded in tiers in the form of loose bags. In each case, a shipment involves a given number of packages, units, tiers, or pounds.

5.2 Samples shall be taken as prescribed at the point of manufacture or at the receiving point as agreed upon by the producer and the consumer. Samples may be taken from the packages as loaded or as received. Each sample taken shall represent a unit, lot, or a given mass of material.

5.3 The size of the individual sample taken shall be a minimum of 4 dm^3 (1 gal). The 4 dm^3 (1 gal) minimum sample size is recommended because pelleted carbon blacks tend to stratify.

NOTE 2—Pellet quality tests may be erroneous due to a local or spotty condition unless the samples are blended through the sample splitter as described in this practice.

6. Sample Preparation and Handling

6.1 Store the samples in airtight containers until the tests are completed.

6.2 Handle samples collected for the determination of pellet quality with discretion to avoid pellet breakdown.

6.3 If individual samples are taken for testing independently, pass each sample through a single-stage riffle-type sample splitter at least twice in order to prevent stratification. This is particularly important if pellet quality tests are to be made on the sample. It is highly recommended that the mean quality of the shipment be calculated from the individual samples. This will provide mean quality, and maximum and minimum variations.

6.4 If individual samples are composited, pass them through a single-stage riffle-type sample splitter at least three times.

7. Procedure

7.1 Select three packages at random from shipments as loaded or as received, taking each package from an area representing a portion of the shipment.

NOTE 3—The packages sampled may be taken one from the top, one near the center, and one near the bottom of a unit load, generally consisting of from 908 to 1135 kg (2000 to 2500 lb).

7.2 Using a scoop remove a 4 dm^3 (1-gal) sample for testing from the geometric center of the bag after carefully removing at least a 30-mm (1-in.) thickness of surface material, or more if needed, to reach the center of the bag from the position sampled.

7.3 An alternative method which may be used for removing the 4 dm^3 (1 gal) sample from the geometric center of the bag

[1] This practice is under the jurisdiction of ASTM Committee D-24 on Carbon Black and is the direct responsibility of Subcommittee D24.61 on Carbon Black Sampling and Statistical Analysis.

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[2] *Annual Book of ASTM Standards*, Vol 14.02.

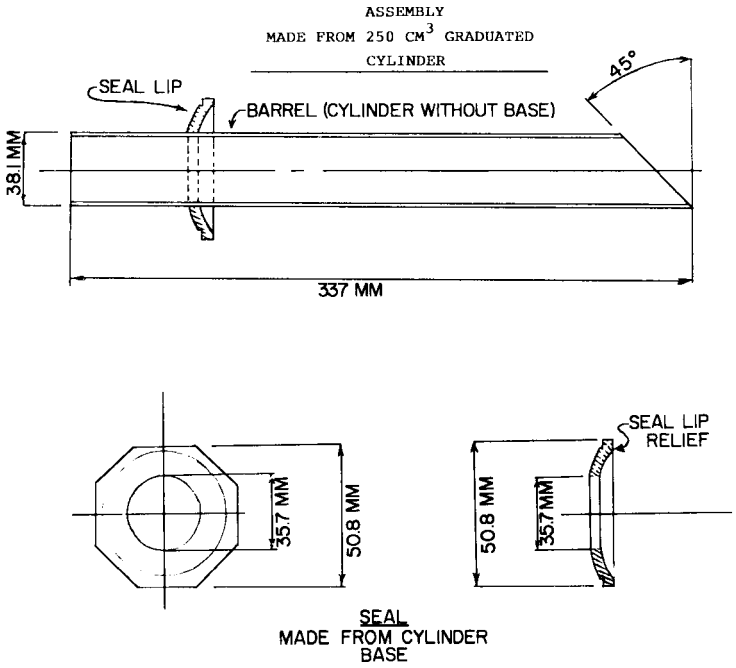

FIG. 1 Sampling Device for Sampling Packaged Carbon Black

is shown in Fig. 1. Make the sampling device from a 250-cm^3 plastic graduated cylinder. Cut off the base of the cylinder to conform with Fig. 1, then drill a hole through the center of this base to permit a slip fit on the tube. Place the bag of carbon black to be sampled in an upright position. Make a 25-mm (1-in.) slit at the approximate center of the upper end of the bag. Insert the sampling tube into the cut bag with the beveled end pointing downward to a depth of approximately 200 mm (8 in.) or as required to reach the geometric center of the bag. Slip the base around the tube and hold against the bag to act as a seal. Turn the bag upside down to allow the carbon black to flow through the tube into the container. Finally, upend the bag once again, remove the sampling device, and seal the bag opening.

7.4 Test the three samples thus obtained from three packages of carbon black singly or composited, as agreed upon by the producer and consumer.

8. Report

8.1 The report of tests made on the material shall include the number of samples selected and their location in the shipment.

NOTE 4—The report of the tests shall include details as required in the appropriate ASTM methods used for testing carbon black.

9. Precision and Bias

9.1 Precision and bias are not applicable to this practice, since it does not produce quantitative data.

10. Keywords

10.1 bags; carbon black; cartons; sampling of packaged shipments