



Standard Practice for Carbon Black—Sampling Bulk Shipments¹

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1. Scope

1.1 This practice outlines procedures for the sampling and data reporting of bulk shipments of carbon black in three-compartment hopper rail cars, but the same principles can apply to sampling compartmented bulk highway trailers as well.

NOTE 1—The tests to be made on the samples obtained by this practice shall be determined by the purchaser and the manufacturer. The specific details of each procedure are described in appropriate ASTM test 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. Significance and Use

2.1 This practice is for use in obtaining representative samples of carbon black in each compartment or in the entire hopper car. These samples may be used to ascertain the average quality or the uniformity of a shipment, or both.

3. General

3.1 Sampling of bulk shipments of carbon blacks is of utmost importance since the location and number of samples taken by different laboratories can have a significant effect on the agreement of test values obtained.

4. Sampling Procedure

4.1 Withdraw approximately a 4 dm³ (1 gal) sample from each sample port, after first withdrawing at least 1 gal of carbon black from each port and discarding it. The sample ports are located on each side of each compartment in a three-compartment bulk hopper rail car.

4.2 If sampling from the top ports of a hopper car, approximately 150 mm (6 in.) of surface material should be raked

aside before collecting approximately 4 dm³ (1 gal) for testing.

4.3 A sample thief may be used to sample from the top ports of a hopper car. The thief must be able to sample at least 150 mm below the surface. Collect approximately 4 dm³ (1 gal) for testing.

4.4 If sampling a hopper car during unloading it is recommended that three samples be collected for testing from each compartment: one at the beginning of loading, one at approximately the middle of unloading and one near the end of unloading. The sample size should be approximately 4 dm³ (1 gal).

4.5 If sampling a hopper car during loading it is recommended that three samples be collected for testing from each compartment: one at the beginning of loading, one at approximately the middle of loading and one near the end of loading. The sample size should be approximately 4 dm³ (1 gal).

4.6 Samples collected as described in 4.1-4.5 may be tested singly or composited. When disputed test results arise reasonable efforts should be made for all parties to test samples taken from the same location.

5. Sample Preparation and Handling

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

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

5.3 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.

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

5.5 Composite samples should be tested if simply the average value of a given property of the shipment is to be determined.

5.6 Individual samples should be tested if average and range values for a given property of the shipment are to be determined.

6. Report

6.1 Report the following information:

- 6.1.1 Number of individual samples and their location.
- 6.1.2 Average value, if composite samples were tested.

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

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6.1.3 Individual values, range and average, if individual samples were tested.

7. Precision and Bias

7.1 Data for precision and bias are not applicable to this practice.

8. Keywords

8.1 carbon black; hopper cars; sampling bulk shipments

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