Designation: ~~D1900 – 19~~ D1900 – 20

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

This standard is issued under the fixed designation D1900; 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 procedures for the sampling and data reporting of bulk shipments of carbon black in three-compartment hopper rail cars and compartmented bulk hopper trailers.

NOTE 1—The tests to be made on the samples obtained by this practice, how many samples are taken, where they are taken, and what statistical values (if any) to report shall be determined by agreement between the purchaser and the manufacturer. This practice gives guidance for use in developing such agreements or for use when no formal agreement exists. The specific details of each procedure are described in appropriate ASTM test methods used for testing carbon black.

NOTE 2—Some purchasers or manufacturers may consider Flexible Intermediate Bulk Containers (FIBC) to be a bulk shipment. See Practice D1799 for guidance on sampling and reporting for this package.

1.2 The values stated in SI units are to be regarded as standard. The values given 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1509 Test Methods for Carbon Black—Heating Loss
D1799 Practice for Carbon Black—Sampling Packaged Shipments
D5817 Practice for Carbon Black, Pelleted—Reduction, Blending, and Drying of Gross Samples for Testing

3. Significance and Use

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

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[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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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

4. Apparatus

4.1 *Sample Splitter,* riffle-type (see Practice D5817 for equipment information).

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

4.3 *Scoop,* sample (optional).

4.4 *Thief,* sample, capable of sampling at least 150 mm (6 in.) below the surface (optional).

5. Sampling Procedure

5.1 In the absence of an agreed upon sampling pattern between the producer and the consumer, the following sampling patterns per shipment are may be used with the assumption that the lot was produced and packaged under conditions to insure acceptable lot uniformity. If the uniformity of the lot is suspect or unknown, the number of samples taken should be increased.

5.2 Withdraw approximately a 4 dm^3 (1 gal) sample from each sample port, after first withdrawing at least 4 dm^3 (1 gal) of carbon black from each port and discarding it. Sample ports are located on each side of each compartment in a three-compartment bulk hopper rail car and on one side of a hopper truck.

5.3 If sampling from the top ports of a hopper car or hopper truck, approximately 150 mm (6 in.) of surface material should be raked aside before collecting approximately 4 dm^3 (1 gal) for testing.

5.4 A sample thief may be used to sample from the top ports of a hopper car or hopper truck. The thief must be able to sample at least 150 mm (6 in.) below the surface. Collect approximately 4 dm^3 (1 gal) for testing.

5.5 If sampling a hopper car or hopper truck during unloading it is recommended that three samples be collected for testing from each compartment: one at the beginning of unloading, one at approximately the middle of unloading, and one near the end of unloading. The sample size should be approximately 4 dm^3 (1 gal). A sample scoop may facilitate collecting these samples.

5.6 If sampling a hopper car or hopper truck 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 dm^3 (1 gal). A sample scoop may facilitate collecting these samples.

5.7 Samples collected as described in 5.2 – 5.6 may be tested singly or composited. See Practice D5817 for guidance on preparing composited samples. When disputed test results arise reasonable efforts should be made for all parties to test samples taken from the same location.

6. Sample Preparation and Handling

6.1 Store the samples in airtight containers until the materials are needed for sample preparation or testing. Hold any excess material in airtight containers for possible follow-up testing until all tests are completed. This is especially critical if the samples are to be tested for heating loss (see Test Methods D1509).

NOTE 3—If the samples are to be tested for *heating loss* and the sampling activity takes place outside an area sheltered from the environment, it is critical that steps be taken to prevent the samples from being exposed to sources of water, such as rain, snow, ~~and ice.~~ice, and water sources related to ocean freight.

6.2 Handle samples collected for the determination of pellet quality with care 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. See Practice D5817. This is particularly important if pellet quality tests are to be made on the sample.