



# Standard Practice for Carbon Black—Sampling Bulk Shipments<sup>1</sup>

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 ( $\epsilon$ ) 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 and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

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

<sup>1</sup> 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.

Current edition approved Nov. 1, 2015. Published December 2015. Originally approved in 1961. Last previous edition approved in 2011 as D1900 – 06(2011). DOI: 10.1520/D1900-06R15.

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

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.

## 4. Sampling Procedure

4.1 Withdraw approximately a 4 dm<sup>3</sup> (1 gal) sample from each sample port, after first withdrawing at least 4 dm<sup>3</sup> (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.

4.2 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<sup>3</sup> (1 gal) for testing.

4.3 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<sup>3</sup> (1 gal) for testing.

4.4 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<sup>3</sup> (1 gal).

4.5 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<sup>3</sup> (1 gal).

4.6 Samples collected as described in 4.1 – 4.5 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.

## 5. Sample Preparation and Handling

5.1 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.

5.2 Handle samples collected for the determination of pellet quality with care 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. See Practice **D5817**. 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. See Practice **D5817**.

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 shall be tested if average and range or sample standard deviation 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.

6.1.3 Individual values, average, and range or sample standard deviation, 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; hopper trucks; sampling bulk shipments

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or [service@astm.org](mailto:service@astm.org) (e-mail); or through the ASTM website ([www.astm.org](http://www.astm.org)). Permission rights to photocopy the standard may also be secured from the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, Tel: (978) 646-2600; <http://www.copyright.com/>*