



Standard Test Method for Dust Control Material on Calcined Petroleum Coke¹

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1. Scope

1.1 This test method covers the determination of the amount of material applied to calcined coke to control dust associated with coke handling and transportation.

1.2 This test method is limited to those materials that are soluble in a solvent that can be used in a Soxhlet extraction type of apparatus such as methylene chloride (dichloromethane).

NOTE 1—Methylene chloride is the most popular solvent for removing dust control oil at the time this procedure is being written. Toluene and methyl chloroform, however, have been used with equal results on all cokes tested which have included only those sprayed with aromatic or waxy materials.

1.3 The values stated in SI units are to be regarded as the standard.

1.4 *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.* For specific hazard statements, see Section 8.

2. Referenced Documents

- 2.1 *ASTM Standards:*
D 346 Practice for Collection and Preparation of Coke Samples for Laboratory Analysis²
D 2013 Method of Preparing Coal Samples for Analysis²
D 2234 Test Methods for Collection of a Gross Sample of Coal²
D 4057 Practice for Manual Sampling of Petroleum and Petroleum Products³
E 11 Specification for Wire-Cloth Sieves for Testing Purposes⁴

3. Terminology

3.1 Definitions:

¹ This test method is under the jurisdiction of ASTM Committee D-2 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.05 on Petroleum Coke Sampling and Procedures.

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² *Annual Book of ASTM Standards*, Vol 05.05.

³ *Annual Book of ASTM Standards*, Vol 05.02.

⁴ *Annual Book of ASTM Standards*, Vol 14.02.

3.1.1 *bulk sample*—the reduced and divided representative portion of the gross sample as prepared for shipment and received by a laboratory.

3.1.2 *analysis sample*—the reduced and divided representative portion of the bulk sample, prepared for use in the laboratory.

3.1.3 *test sample*—the weighed portion of the analysis sample actually used in a test.

3.2 Descriptions of Term Specific to This Standard:

3.2.1 *dedusting material*—a substance, such as a petroleum oil, a petroleum wax, an aqueous latex emulsion, and the like, that is applied to (sprayed on) calcined petroleum coke to control dust associated with coke handling and transport.

4. Summary of Test Method

4.1 The dust control material is dissolved from a weighed dry representative sample of 6.3 mm maximum sized coke by methylene chloride in a Soxhlet extraction apparatus. The mass of the residue remaining after distilling and evaporating the solvent is the mass of dust control material. The amount of residue as a percent of the original mass is calculated.

5. Significance and Use

5.1 The test is designed to quantify the amount of dust control material added to calcined coke. The dust control material is applied to calcined coke to help maintain a dust free environment. It generally serves no other useful purpose. It adds weight to the coke and can have a negative effect on the quality of carbon and graphite artifacts made from the treated coke. For these reasons the coke customer wants to know the amount of dust control material on the coke and can specify a maximum level.

6. Apparatus

6.1 *Extractor*, with condenser, Soxhlet, 200 mL capacity.⁵

6.2 *Flask*, round bottom with short neck, 250-mL.

6.3 *Heating Mantle*, for 250-mL flask.

6.4 *Boiling Chips*.

6.5 *Thimbles, Cellulose Extraction*, 43 mm in diameter by 123 mm in height (single thickness; 9 to 11 μ m for *liquid* retention).

⁵ An example is the Soxhlet extraction apparatus, Kimax (glass), 24005 series, catalog No. 393-2711, available from Curtin-Matheson Scientific, Inc., P.O. Box 1546, Houston, TX 77251.