



Designation: D7569/D7569M – 24

Standard Practice for Determination of Gas in Coal—Direct Desorption Method¹

This standard is issued under the fixed designation D7569/D7569M; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This practice describes methods for the direct determination of the gas in coal by desorption using samples obtained by drill coring methods from the surface. It sets out guidelines for the equipment construction, sample preparation and testing procedure, and method of calculation.

1.2 Indirect methods for the determination of the gas in coal (not covered in this practice) are based on either the gas absorption characteristics of coal under a given pressure and temperature condition or other empirical data that relate the gas in coal to such other parameters as coal rank, depth of cover, or gas emission rate.

1.3 This practice covers the following two direct methods, which vary only in the time allowed for the gas to desorb from the core, or sidewall core, before final crushing:

1.3.1 The slow desorption method in which volumetric readings of gas volume are taken frequently (for example, every 10 min to 15 min) during the first few hours, followed by hourly measurements for several hours, and then measurements on 24-h intervals until no or very little gas is being desorbed for an extended period of time.

1.3.2 The fast desorption method in which after initial desorbed gas measurements to obtain data for lost gas calculations are taken, the canister is opened and the sample is transferred to the coal crusher. The remaining gas volume is measured on a crushed sample.

1.4 This practice is confined to the direct method using core, or sidewall core obtained from drilling. The practice can be applied to drill cuttings samples; however, the use of cuttings is not recommended because the results may be misleading and are difficult to compare to the results obtained from core desorption. The interpretation of the results does not fall within the scope of the practice.

1.5 *Units*—The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents;

therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

1.6 *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.*

1.7 *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

- D121 Terminology of Coal and Coke
- D167 Test Method for Apparent and True Specific Gravity and Porosity of Lump Coke
- D1412 Test Method for Equilibrium Moisture of Coal at 96 to 97 Percent Relative Humidity and 30 °C
- D2799 Test Method for Microscopical Determination of the Maceral Composition of Coal
- D3172 Practice for Proximate Analysis of Coal and Coke
- D3173 Test Method for Moisture in the Analysis Sample of Coal and Coke
- D3174 Test Method for Ash in the Analysis Sample of Coal and Coke from Coal
- D3176 Practice for Ultimate Analysis of Coal and Coke
- D3180 Practice for Calculating Coal and Coke Analyses from As-Determined to Different Bases
- D3302 Test Method for Total Moisture in Coal
- D5192 Practice for Collection of Coal Samples from Core
- E1272 Specification for Laboratory Glass Graduated Cylinders

¹ This practice is under the jurisdiction of ASTM Committee D05 on Coal and Coke and is the direct responsibility of Subcommittee D05.21 on Methods of 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.