

ICS 73.040
CCS D 21



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 19560-2025

Replacing GB/T 19560-2008

**Experimental method of high-pressure isothermal adsorption to
coal**

煤的高压等温吸附试验方法

Issued on: August 1, 2025

Implemented on: November 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 19560-2008 "High-pressure isothermal adsorption test method for coal".

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added schematic diagram of isothermal adsorption equipment (see 5.2);
- b) Added requirements for reagents (see 6.2);
- c) The equilibrium moisture calculation formula (1) has been changed (see 7.3.3, 6.3.3 of the 2008 edition);
- d) Added some chapter titles (see 8.3.4, 8.3.5, 8.4.6, and 11.1).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Coal Industry Association.

This document is under the jurisdiction of the National Coal Standardization Technical Committee (SAC/TC42).

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This document was first published in 2004, revised for the first time in 2008, and this is the second revision.

1 Scope

This document describes the volumetric high-pressure isothermal adsorption test method for coal.

This document is applicable to the determination of the adsorption capacity of bituminous coal and anthracite for methane, carbon dioxide and other gases.

The determination of the adsorption capacity of the body was carried out according to the reference.

2 Normative references

GB/T 212

GB/T 474

GB/T 31537

3 Terms and Definitions

The terms and definitions defined in GB/T 31537 apply to this document.

4 Method Summary

The coal sample with a certain particle size that reaches equilibrium moisture is placed in a sealed container and its particle size is measured under the same temperature and different pressure conditions.

The volume of test gases such as methane and carbon dioxide adsorbed at adsorption equilibrium; according to the Langmuir monolayer adsorption theory, the volume of test gases such as methane and carbon dioxide adsorbed at adsorption equilibrium is calculated theoretically.

Calculate the adsorption constants [Langmuir volume (VL), Langmuir pressure (VL)] that characterize the adsorption characteristics of coal for test gases such as methane and carbon dioxide.

(pL)] and isothermal adsorption curves.

5.1 Equilibrium moisture determination

5.1.1 Dryer.

5.1.2 Balance. sensitivity 0.1 mg.

5.1.3 Constant temperature system.

5.2 Isothermal adsorption device

The schematic diagram of the isothermal adsorption equipment is shown in Figure 1.

- Sample cylinder;
- Reference cylinder;
- Constant temperature control system. sensitivity 0.3°C;