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

GB/T 24527-2009

Carbon materials -- Determination moisture in air-dried sample

炭素材料内在水分的测定

(English Translation)

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Table of Contents

Foreword...	3
1 Scope...	4
2 Normative References...	4
3 Terms and Definitions...	4
4 Instrumentation...	5
5 Sampling and Preparation...	5
6 Test Procedures...	5
7 Calculation of Results...	6
8 Precision...	6
9 Test Report...	6

1 Scope

This Standard specifies the definition, instrumentation, specimen preparation, test procedures, calculation of results, and precision for the inherent moisture content of carbon materials.

This Standard applies to the determination of inherent moisture content in various carbon materials, including graphite products, carbon products, carbon pastes, and specialty graphite products.

2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 1427 Sampling method of carbon material

GB/T 8170 Rules of rounding off for numerical values & expression and judgement of limiting values

3 Terms and Definitions

For the purposes of this Standard, the following terms and definitions apply.

3.1 Inherent moisture

The inherent moisture of carbon materials refers to the moisture lost when an air-dried sample is heated to $110^{\circ}\text{C} \pm 5^{\circ}\text{C}$.

3.2 Air dried moisture [Translator Note. Here it should be air dried sample]

If the mass change of the carbon material sample does not exceed 0.1% after continuous drying at a temperature no higher than 50°C for 1 h, the sample is called an air-dried sample.

4 Instrumentation

4.1

Analytical balance. Sensitivity 0.1 mg.

4.2 Drying oven. Equipped with automatic temperature control device; equipped with a built-

in blower; and capable of maintaining the temperature within the range of $110^{\circ}\text{C} \pm 5^{\circ}\text{C}$.

4.3 Desiccator. Contains color-changing silica gel or anhydrous calcium chloride.

4.4 Glass weighing bottle. 70 mm in diameter, and 30 mm ~ 40 mm in height.

4.5 Porcelain dish. 60 mL.

5 Sampling and Preparation

5.1

Sampling shall be performed in accordance with GB/T 1427.

5.2

Graphite product and special graphite product specimens shall be crushed and ground until all particles pass through a 0.20 mm standard sieve.

5.3

Carbon product specimens shall be crushed and ground until all particles pass through a 0.20 mm standard sieve.

5.4

Crush the carbon paste specimen to less than 4 mm, mix thoroughly; and quarter to approximately 60 g. Crush the sample again until it passes through a 0.50 mm standard sieve.

5.5

Each specimen shall be dried at no more than 50°C to produce an air-dried sample.

5.6

Moisture content shall be determined immediately after preparation. If it can't be determined soon, the specimen shall be immediately stored in a ground-mouth bottle.

6 Test Procedures

6.1

Weigh the specimen using a pre-dried and weighed (accurate to 0.0002 g) weighing bottle or porcelain dish. Use a weighing bottle to weigh 25g ~ 50g of graphite product or specialty graphite product specimens, and weight 10g ~ 50g of carbon product specimens; use a porcelain dish to weigh 10g ~ 50g of carbon paste specimens; accurate to 0.0002 g. Spread the powder sample evenly in the weighing bottle or porcelain dish.

6.2

Open the weighing bottle cap and place the specimen and weighing bottle, or the specimen and porcelain dish, in a drying oven that has been heated to 110°C ± 5°C and has been air-blown for 3 to 5 min. Dry for 2 h with the air blown continuously.

6.3

Remove the weighing bottle or porcelain dish from the drying oven (the weighing bottle

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