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

GB/T 17664-2024

Replacing GB/T 17664-1999

Charcoal

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1 Scope

GB/T 17664-2024 is the Chinese national standard on charcoal, in the field of petroleum and related technologies. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 29 September 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 April 2025. Classification: ICS 75.160, CCS B 73. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the technical requirements for charcoal, describes the corresponding test methods, and specifies requirements for inspection, marking, packaging, transportation, and storage. This document applies to the production, trade, and distribution of charcoal made from biomass raw materials such as wood, bamboo, and straw by carbonization.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 5330 Industrial woven metal wire cloth (square opening series)

GB/T 6678 General principles for sampling chemical products

GB/T 30727 Determination of calorific value in solid biofuels

3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

3.1 high-density hard wood charcoal Charcoal carbonized from hard wood with high density and high hardness.

3.2 hard wood charcoal Charcoal carbonized from a mixture of hard and soft hard woods.
NOTE. Also known as mixed wood charcoal.

3.3 conifer charcoal Charcoal carbonized from coniferous woods such as conifer.

3.4 fruit wood charcoal Charcoal carbonized from a mixture of fruit tree branches and trunks.

3.5 machine-made charcoal Moulded charcoal made from raw materials such as wood and

bamboo processing residues or straw by mechanical extrusion and carbonization.

3.6 chrysanthemum-like charcoal Rod-shaped charcoal carbonized from burning oak, with a chrysanthemum-like cross- section.

4 Technical requirements

4.1 Appearance. black, rod-shaped or block-shaped solid.

4.2 The technical indicators of charcoal shall comply with the provisions of Table 1 or Table 2. Table 1 -- Technical indicators of high-density hard wood charcoal, hard wood charcoal, and conifer charcoal Table 2 -- Technical indicators of fruit wood charcoal, machine-made charcoal, and chrysanthemum-like charcoal

5.1 Determination of moisture

5.1.1 Principle A specimen of a certain mass is dried at a specified temperature to constant mass, the percentage of the mass lost relative to the original mass of the specimen is determined.

5.1.2 Instruments and equipment

5.1.2.1 Electric thermostatic drying oven. room temperature ~ 200 °C, temperature control accuracy ± 1 °C.

5.1.2.2 Balance. sensitivity

0.01 g.

5.1.2.3 Weighing bottle.

5.1.3 Test procedure Perform two tests in parallel. Crush the specimen into particles smaller than 10 mm, mix quickly, weigh 10 g ~ 20 g of the specimen (accurate to

0.01

g) into a pre-dried and weighed weighing bottle, place it in a drying oven preheated to 105 °C, dry for 2 h ~ 3 h, remove the bottle, place it in a desiccator, cool to room temperature (approximately 30 min), and weigh. Then perform check tests, each lasting 30 min, until the specimen mass loss is less than

0.01 g or the mass increases. In the latter case, the mass before the increase shall be used as the basis for calculation.

5.1.4 Test data processing The moisture is expressed as W, as a percentage (%), and calculated according to formula (1). where. W - the moisture content, %; m - the mass of the specimen, in grams (g); m1 - the mass of the dried specimen, in grams (g). The calculation result is expressed as the arithmetic mean of two parallel tests, and the relative deviation

shall not exceed 0.5 %. The results are expressed to one decimal place.

5.2 Determination of ash

5.2.1 Principle A dried specimen of a certain mass is ignited and ashed at a specified temperature to constant mass (weighed after cooling), the percentage of the mass of the residue relative to the original mass of the specimen is determined.

5.2.2 Instruments and equipment

5.2.2.1 High-temperature electric furnace. room temperature ~ 1000 °C, temperature control accuracy ± 5 °C.

5.2.2.2 Electric thermostatic drying oven. room temperature ~ 200 °C, temperature control accuracy ± 1 °C.

5.2.2.3 Porcelain crucible with a lid. volume 30 mL.

5.2.2.4 Analytical balance. sensitivity 0.0001 g.

5.2.3 Samples Take at least 10 g of sample to grind, pass all through a

0.25 mm sieve, place it in an oven at 105 °C to dry to constant mass, and place it in a desiccator to cool to room temperature.

5.2.4 Test procedure

5.2.4.1 Place a 30 mL porcelain crucible with a lid in a high-temperature electric furnace, ignite at (800 ± 20) °C to constant mass, cool in air for 5 min, place the crucible in a desiccator, and weigh after cooling to room temperature (accurate to 0.0001 g).

5.2.4.2 Weigh 1 g (accurate to 0.0001

g) of the dried specimen and place it in a 30 mL porcelain crucible that has been ignited to constant mass; place the crucible and specimen together in a high-temperature electric furnace at a temperature not exceeding 300 °C; open the crucible lid, close the furnace door, gradually raise the furnace temperature to 800 °C, and ignite it at (800 ± 20) °C to constant mass. Remove the crucible and place it on a porcelain plate, cover the crucible with the lid, cool it in air for about 5 min, place it in a desiccator, cool it to room temperature (about 30 min), and weigh (accurate to 0.0001 g).

5.2.5 Test data processing The ash is expressed as A, as a percentage (%), and calculated according to formula (2). where. A - the ash content, %; m_3 - the mass of the ash and the crucible, in grams (g); m_2 - the mass of the crucible, in grams (g); m_A - the mass of the specimen, in grams (g). The calculation result is expressed as the arithmetic mean of two parallel tests, and the relative deviation shall not be greater than 0.2 %. The results are