



Forestry Industry Standard of the People's Republic of China

LY/T 3205—2020

Special bamboo charcoal flake

专用竹片炭

(English Translation)

Issue date:2020-03-30

Implementation date:2020-10-01

Foreword

SAC/TC 263 is in charge of this English translation. In case of any doubt about the contents of English translation, the Chinese original shall be considered authoritative.

This standard was drafted in accordance with GB/T 1.1-2009.

This standard was proposed and prepared by SAC/TC 263, National Technical Committee on Bamboo and Rattan of Standardization Administration of China.

Special bamboo charcoal flake

1 Scope

This document specifies the terms and definitions, classification, requirements, test methods, inspection rules, marking, packaging, storage and transport.

It is applicable to bamboo charcoal flakes for purposes of food contact, water quality and dietary quality improvement, but not for any edible applications.

2 Normative References

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

GB/T 12496.8-1999 *Test methods of wooden activated carbon—Determination of iodine number*

GB/T 5750.11 *Standard examination methods for drinking water - Disinfectants parameter*

GB/T 24525-2009 *Method for determination of specific resistance of carbon materials*

GB/T 26913-2011 *Bamboo charcoal*

GB 31604.7 *National Food Safety Standard - Food Contact Materials and Articles - Decolorization Test*

GB 31604.49 *National Food Safety Standard - Food Contact Materials and Articles - Determination of Arsenic, Cadmium, Chromium and Lead; Migration of Arsenic, Cadmium, Chromium, Nickel, Lead, Antimony and Zinc*

LY/T 1929-2010 *Test on the elementary physical and chemical properties of bamboo charcoal*

BB/T 0049-2008 *Mineral desiccant for packaging*

3 Terms and definitions

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

3.1

special bamboo charcoal flake

Bamboo charcoal flake prepared by carbonizing bamboo materials, mainly used for the purpose of food storage, rice cooking or drinking water quality improvement

3.2

capability of unit adsorption

The actual capability of moisture adsorption by a single unit of bamboo charcoal flake in standard atmospheric conditions ($25^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 101.325kPa)

[BB/T 0049-2008, 3.3 Terms and definitions]

4 Classification

4.1 Classification according to the appearance

a) node-free bamboo charcoal flake

b) noded bamboo charcoal flake

4.2 Classification according to the applications

- a) bamboo charcoal flake for food storage
- b) bamboo charcoal flake for drinking water quality improvement
- c) bamboo charcoal flake for cooking

5 Requirements

5.1 Appearance requirement

Black with no peculiar smell.

5.2 Dimensions

Length: 15mm-50 mm, Width: 30mm-200 mm. Other dimensions can be provided in other specification upon agreement by supplier and purchaser.

5.3 Specific properties requirements

Requirements on moisture content, electrical resistance, ash content, fixed carbon content, iodine adsorption value, total arsenic, lead, cadmium and chromium, capability of unit adsorption, augmentation of soluble potassium, calcium, sodium, and magnesium in water, pH value, and decolorization test are listed in table 1.

Table 1 Requirements of physical and chemical properties of bamboo charcoal flakes

No.	Item	Unit	Description	
			Grade I	Grade II
1	Moisture content	%	≤ 8	≤ 10
2	Electrical resistance	$\mu\Omega \cdot m$	$\leq 10^9$	$\leq 10^{11}$
3	Ash content	%	≤ 3.5	≤ 5.5
4	Fixed carbon content	%	≥ 85.0	≥ 75.0
5	Iodine adsorption value	g/100g	≥ 285	≥ 200
6	As, Total arsenic	mg/kg	≤ 3	
7	Pb, lead	mg/kg	≤ 10	
8	Cd, cadmium	mg/kg	≤ 1	
9	Cr, chromium	mg/kg	≤ 1	
10	Capability of unit ^a adsorption	g	≥ 6.00	≥ 4.00
11	Augmentation of soluble potassium, calcium, sodium, and magnesium in water ^{b, c}	mg/kg	≥ 35.0	≥ 24.0
12	pH value ^b	/	$7.0 \leq \text{pH} \leq 10$	
13	Decolorization test ^c	/	Clean and clear liquid (after bamboo charcoal flake soaked in water)	

Note:

- a: applicable to bamboo charcoal flake for food storage,
- b: applicable to bamboo charcoal flake for drinking water quality improvement,
- c: applicable to bamboo charcoal flake for cooking.

6 Test methods

6.1 Appearance inspection

Put samples of bamboo charcoal flakes under natural light, and then observe and decide the sample by sense of sight and smell.

6.2 Determination of moisture content

Moisture content shall be determined in accordance with method specified in Clause 6.3 of GB/T 26913-2011.

6.3 Determination of electrical resistance

Electrical resistance shall be determined in accordance with method specified in Clause 4.3 of GB/T 24525-2009.

6.4 Determination of ash content

Ash content shall be determined in accordance with method specified in Clause 6.4 of GB/T 26913-2011.

6.5 Determination of fixed carbon content

Fixed carbon content shall be determined in accordance with method specified in Clause 6.6 of GB/T 26913-2011.

6.6 Determination of iodine absorption value

Iodine absorption value shall be determined in accordance with GB/T 12496.8-1999.

6.7 Determination of total arsenic content

Total arsenic content shall be determined in accordance with GB 31604.49.

6.8 Determination of lead content

Lead content shall be determined in accordance with GB 31604.49.

6.9 Determination of cadmium content

Cadmium content shall be determined in accordance with GB 31604.49.

6.10 Determination of chromium content

Chromium content shall be determined in accordance with GB 31604.49.

6.11 Determination of capability of unit adsorption

Capability of unit adsorption shall be determined in accordance with BB/T 0049-2008.

6.12 Determination of augmentation of soluble potassium, calcium, sodium, and magnesium in water

Augmentation of soluble potassium, calcium, sodium, and magnesium in water shall be determined in accordance with GB 5750.11.

6.13 Determination of pH value

pH value shall be determined in accordance with method specified in Clause 4.6 of LY/T 1929-2010.

6.14 Determination of decolorization test

Decolorization test shall be determined in accordance with GB 31604.7.

7 Inspection rules

7.1 Batch and sampling

7.1.1 Batch

A quantity or consignment of bamboo charcoal flakes of same specifications, produced from basically the same bamboo materials and production process, can be regarded as one batch. Sampling conducted in a batch.

7.1.2 Sampling

Conduct random sampling from one batch. A minimum 1.0 kg of sample shall be sampled for each batch, and then split it into two parts, seal it separately in a clean, dry bags, and label it. one bag is for analysis, and the other reserved for re-inspection. The information of label includes: sample name and serial number, production shift team, batch number, grade, sampling date, and sample collector.

7.2 Inspection

Factory inspection and type inspection are applicable to product inspection.

7.2.1 Factory inspection

Factory inspection shall be conducted for each batch of bamboo charcoal flakes. The analysis items contains: appearance, moisture content, electrical resistance, ash content, fixed carbon content, iodine adsorption value, total arsenic, lead, cadmium and chromium, capability of unit adsorption, augmentation of soluble potassium, calcium, sodium, and magnesium in water, pH value, and decolorization test.

7.3 Type inspection

Inspection items cover all requirements specified in this document. Type inspection shall be conducted in case of any of the following situations:

- a) Restarting production after a long-term production halt;
- b) Changes in raw materials or major production processes that may affect the product quality;
- c) Type inspection requested by state quality supervision administrations;
- d) Major difference occurred between delivery inspection and previous type inspection results;

7.4 Decision rule

A batch of bamboo charcoal product can be ruled as qualified product when the inspection results of product appearance, dimensions and specific properties are in accordance with the requirements specified in this document, otherwise, the entire batch shall be ruled as an unqualified one.

8 Marking, packaging, storage and transport

8.1 Marking

Product marking shall contain the following information: product name, grade, date of production, quality inspector, or provide product information in accordance with procurement contract.

8.2 Packaging

The labeling on the packaging shall contain the following information: manufacturer, product name, quantity, grade, place of origin, date of production, applied standard and contact information. The packaging shall be intact, and avoid pressing and contaminant exposure.

8.3 Storage and transport

Products shall be stored in ventilated and dry warehouse while avoiding ignition exposure. During the shipment, products shall be tackled with care and avoid rain or sunlight exposure, it may not be stored or transported together with toxic or harmful items.