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

**GB/T 12496.9-2015**

Replacing GB/T 12496.9-1999

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**Test methods of wooden activated carbon - Determination of  
decolorization of caramel**

木质活性炭试验方法 焦糖脱色率的测定

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## Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009. This Standard replaced GB/T 12496.9-1999 Test Methods of Wooden Activated Carbon - Determination of Decolorization of Caramel. Compared with GB/T 12496.9- 1999, this Standard has the major technical content changes as follows: give more accurate provisions on the operation procedures of the caramel preparation. This Standard was proposed by and under the jurisdiction of State Forestry Administration. Drafting organizations of this Standard. Institute of Chemical Industry of Forest Products, Chinese Academy of Forestry; and Nanjing Technology Development Corporation, Institute of Chemical Industry of Forest Products, Chinese Academy of Forestry. Chief drafting staffs of this Standard. Gong Jianping, Dai Weidi, Zhang Yanping, Xu Yu, Chen Chao, Jia Yujie, and Zhu Guangzhen. The historical editions replaced by this Standard are as follows:

--- GB/T 12496.1-1990;

--- GB/T 12496.9-1999. Test Methods of Wooden Activated Carbon - Determination of Decolorization of Caramel

## 1 Scope

GB/T 12496.9-2015 is the Chinese national standard on test methods of wooden activated carbon - determination of decolorization of caramel, in the field of agriculture. 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 3 July 2015 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 2 November 2015. Classification: ICS 65.020, CCS B73. 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 Standard specifies the test method for the decolorization ratio of caramel pigments by wood activated carbon. This Standard is applicable to the determination of the decolorization ratio of caramel by various types of activated carbon for decolorization.

## 2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 6682-2008 Water for Analytical Laboratory Use - Specification and Test Methods

## 3 Method Summary

The sample and caramel are mixed and absorbed, then filtered; and use a spectrophotometer to measure the absorbance of the filtrate.

## 4 Main Instruments

- 4.1 1000mL three-neck flask.
- 4.2 Electric mixer (variable speed).
- 4.3 Glass thermometer (scale 0°C ~ 200°C).
- 4.4 Temperature controlled electric furnace (or electric heating jacket 1000mL).

## 5 Main Reagents

The water used in this standard shall comply with the specification of Grade-III water specified in GB/T 6682-2008. Unless otherwise specified, the listed reagents refer to analytically pure reagents.

- 5.1 Anhydrous glucose [C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>] (HG 3-1094).

5.4 Potassium dichromate (GB 1259), benchmark reagent.

### 6.1 Method-A Caramel

6.1.1 Preparation of Method-A caramel stock solution Take 250g of anhydrous glucose; place it in a 1000mL three-neck flask; add 250mL of water; install an electric mixer and thermometer; and open the other neck. Place the flask in a glycerin bath (the glycerin may be heated in advance), so that the level of the sugar liquid in the flask is consistent with the level of the glycerin bath.

6.1.2 Identification of Method-A caramel stock solution Take 0.833g of caramel stock solution; add water to dissolve and make constant volume to 500mL.

### 6.2 Method-B caramel

6.2.1 Preparation of Method-B caramel stock solution Take 250g of anhydrous glucose; place it in a 1000mL three-neck flask; add 250mL of water; install an electric mixer and thermometer; and open the other neck. Place the flask in a glycerin bath (the glycerin may be heated in advance), so that the level of the sugar liquid in the flask is consistent with the level of the glycerin bath.

6.2.2 Identification of Method-B caramel stock solution Take 1.00g (accurate to 0.01g) of caramel stock solution; add water to dissolve and make constant volume to 500mL. Then use the spectrophotometer to measure the absorbance in a cuvette with a wavelength of 426nm and a light path length of 1cm; and the absorbance difference with the potassium dichromate color standard solution I under the same conditions shall be no greater than  $\pm 0.03$ . If the absorbance exceeds the above provisions, add a little water to the original solution or evaporate a little water to achieve the specified absorbance.

### 6.3 Potassium dichromate color standard solution

6.4 Preparation of caramel test solution Take 17.00g (accurate to 0.01g) of the certified caramel stock solution of Method A or Method B; dissolve it with water and transfer to a 500mL volumetric flask to make constant volume. After preparation, use it on the same day; or store it in the refrigerator at  $-1^{\circ}\text{C} \sim 5^{\circ}\text{C}$ ; the period of use is 3 months. Test solution preparation may be reduced or increased in proportion.

## 7 Operation Procedures

7.1 Method-A caramel decolorization Take 0.400g (accurate to 1mg) of the dried sample crushed to a particle size  $\leq 71\mu\text{m}$  (through a 200-mesh sieve); place it in a 100mL conical flask with a stopper; add 25mL of caramel test solution by a pipette; and shake it slightly to wet the sample.

## 7.2 Method-B caramel decolorization Take

0.350 g (accurate to 1 mg) of dried sample crushed to a particle size  $\leq 71\mu\text{m}$  (through a 200-mesh sieve); and follow the Method-A caramel decolorization procedure of specified in 7.1.

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