



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

GB 1886.255-2016

**National Food Safety Standard -- Food Additives -- Activated
Carbon**

食品安全国家标准 食品添加剂 活性炭

(English Translation)

Issued on: August 31, 2016

Implemented on: January 1, 2017

Issued by: National Health and Family Planning Commission

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1 Scope

This standard applies to coal, lignite, peat and other non-wood materials as raw materials by physical or chemical method of food additives made of activated carbon (Non-wood activated carbon).

2.2 Relative molecular mass

12.01 (according to 2011 international relative atomic mass)

3.1 Sensory requirements

Sensory requirements shall comply with the requirements of Table 1.

Table 1 sensory requirements

The project requires a test method Color black State powder or particles Take the appropriate amount of sample in the beaker and observe the color under natural light Ze and state

3.2 Physical and chemical indicators

Physical and chemical indicators should be consistent with the provisions of Table 2.

Table 2 Physical and chemical indicators

Item Index Test Method Iodine Adsorption Value (in dry basis)/(mg/g) ≥ 400 GB/T 7702.7
Dry reduction, w /% in accordance with claim A.3 in Appendix A.

Sulfate Ash, w /% Conformity to Assertion A.4 in Appendix A.

Water soluble, w /% ≤ 4.0 Appendix A A.5 Cyanide through Test Appendix A, A.6

Table 2 (continued)

Item Index Test Method Advanced Aromatic Hydrocarbons Pass Test Appendix A A.7
 Arsenic (As)/(mg/kg) ≤ 3.0 Appendix A A.8 Lead (Pb)/(mg/kg) ≤ 5.0 Appendix A A.9
 Heavy metals (Pb)/(mg/kg) ≤ 40 Appendix A A.10 Appendix A Testing method A.1 General
 provisions the reagents and water used in this standard refer to the pure reagent and the
 tertiary water specified in GB/T 6682 when no other requirements are specified.

Standard titration solution used in the test, the standard solution for the determination of
 impurities, preparations and products, without any other requirements, GB/T 601, GB/T
 602, GB/T 603. The solution used in the test refers to water when it is not specified with the
 formulation of the solvent Solution.

A.2 Identification test A.2.1 Reagents and materials A.2.1.1 Hydrochloric acid solution. 5
 95.

A.2.1.2 Iodine solution. Dissolve 14.0 g of iodine and 36.0 g of potassium iodide in 100 mL
 of water, add 3 drops of hydrochloric acid, dilute to 1000 mL with water, Shake well.

A.2.2 Identification method Weigh about 3.0g of the sample, placed in 10mL hydrochloric
 acid solution containing iodine bottle, boil and keep for 30s, cooled to room temperature,
 plus 100mL iodine solution, plug the stopper, strong shaking 30s. With medium-speed
 qualitative filter paper filter, discard the original filtrate 20mL, the filtrate transferred to 50mL
 colorimetric tube to the scale, compared with the reference solution, the color should not be
 deeper than the reference solution.

Reference solution. with a pipette to remove 10mL of iodine solution placed in 50mL
 colorimetric tube, diluted with water to the mark, shake.

A.3 Determination of dry reduction A.3.1 Instruments and equipment Weighing bottle.
 Phi50mm x 30mm.

A.3.2 Analysis steps Use a weighing bottle that has been dried at $120^{\circ}\text{C} \pm 2^{\circ}\text{C}$ until the
 mass is constant. Weigh 1 g to 2 g of sample, accurate to 0.0002 g at $120^{\circ}\text{C} \pm$ Dried at 2°C
 for 4 h. After being allowed to stand in the desiccator and weighed.

A.3.3 Calculation of results the mass fraction w_1 of the drying reduction is calculated
 according to the formula (A.1) $w_1 = \frac{m_1 - m_2}{m} \times 100\%$ (A.1) where.

m_1 --- the quality of the sample and weighing bottle before drying, in grams (g);

m_2 --- the quality of the dried sample and weighing bottle, in grams (g);

m --- the quality of the sample, in grams (g).

The results of the test are based on the arithmetic mean of the parallel measurement
 results. The absolute difference between the two independent determinations obtained
 under repeatability conditions the ratio of the value to the arithmetic mean is not more than

2%.

A.4 Determination of Sulfate Ash A.4.1 Reagents and materials A.4.1.1 Ammonium carbonate.

A.4.1.2 Sulfuric acid.

A.4.1.3 Sulfuric acid solution. 1 19.

A.4.2 Instruments and equipment A.4.2.1 porcelain crucible. 30mL.

A.4.2.2 High temperature furnace. can control the temperature at $800\text{ }^{\circ}\text{C} \pm 25\text{ }^{\circ}\text{C}$.

A.4.3 Analysis steps Approximately 0.5 g of the sample was weighed to 0.0002 g and placed in a porcelain crucible at a constant temperature of $800\text{ }^{\circ}\text{C} \pm 25\text{ }^{\circ}\text{C}$ until a constant mass was added.

Into a sufficient amount of sulfuric acid solution, infiltration of all samples. Placed on the hot plate slowly heated until the sample dry and completely carbonized, continue to heat straight to all samples volatilized or almost all of the carbon is oxidized and cooled to room temperature. Add 0.1mL sulfuric acid wetting residue, according to the above way to continue to add Heat until the residue and excess sulfuric acid are evaporated, in order to promote the evaporation of sulfuric acid in the addition of sulfuric acid residue to add a few pieces of ammonium carbonate. Continue on $800\text{ }^{\circ}\text{C} \pm 25\text{ }^{\circ}\text{C}$ to a constant mass.

A.4.4 Calculation of results the mass fraction w_2 of the sulfate ash is calculated according to the formula (A.2) $w_2 = \frac{m_3 - m_4}{m} \times 100\%$ (A.2) where.

m_3 - the mass of the residue and crucible after burning, in grams (g);

m_4 --- crucible quality, in grams (g);

m --- the quality of the sample, in grams (g).

The results of the test are based on the arithmetic mean of the parallel measurement results. The absolute difference between the two independent determinations obtained under repeatability conditions the value is not greater than 0.5%.

A.5 Determination of water-soluble substances A.5.1 Instruments and equipment A.5.1.1 Reflow condenser.

A.5.1.2 electric heating oven. can control the temperature of $100\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$.

A.5.2 Analysis steps Approximately 5 g of the sample that had passed through the 71 [mu]m test sieve was weighed to 0.01 g. Placed in a 250 mL with a reflux condenser and a native valve Dry the flask. Add 100.0 mL of water and several glass spheres, heated to reflux for 1 h. Slightly cool and then use medium speed qualitative filter paper Dry filter, discard the original 10mL filtrate. The filtrate (filtrate A) was cooled to room temperature. Remove the 25 mL filtrate with pipette and dried in a vial at $100\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for 1 h. The

evaporated dish was placed on a water bath and evaporated to the filtrate to dryness, not in the evaporation process the solution should be boiled. Dried at $100^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 1 h and weighed. Retention filtrate A is used for the determination of arsenic, lead and heavy metals.

A.5.3 Calculation of results the mass fraction of water-soluble matter w_3 is calculated according to formula (A.3) $w_3 = \frac{m_5 - m_6}{m} \times 100\%$ (A.3) where.

m_5 --- the quality of the residue and evaporating dish after drying, in grams (g);

m_6 --- the quality of the evaporative dish, in grams (g);

m --- the quality of the sample, in grams (g);

25 --- Remove the volume of the sample solution in milliliters (mL);

100 - The volume of water added in milliliters (mL).

The results of the test are based on the arithmetic mean of the parallel measurement results. The absolute difference between the two independent determinations obtained under repeatability conditions the value is not greater than 0.3%.

A.6 Determination of cyanide A.6.1 Reagents and materials A.6.1.1 tartaric acid.

A.6.1.2 Sodium hydroxide solution. 10 g/L.

A.6.1.3 Hydrochloric acid solution. 1 1.

A.6.1.4 ferrous sulfate solution. 50 g/L.

A.6.1.5 Ferric chloride solution. 100 g/L.

A.6.2 Analysis steps Approximately 5 g of the sample that had passed through the 71 μm test sieve was weighed to 0.01 g. Placed in a round bottom distillate flask with a branch, and added 50 mL of water, 2 g of tartaric acid, gently rotated, the sample was completely wetted and the tartaric acid was dissolved and the flask was heated and distilled. Distillate with a rubber hose in a graduated cylinder containing 12 mL of sodium hydroxide solution, when the distillate was 25 mL, the distillation was stopped and the rubber tube was immediately pulled out, and the distillate Diluted to 50mL, shake. Absorb 25mL of the solution into the beaker, add 1mL ferrous sulfate solution, heated to near boiling, cooling, add 1mL Hydrochloric acid solution and 2 drops of ferric chloride solution, and then observe whether the solution appears Prussian blue compounds. If there is no Prussian blue, then pass test.

A.7 Determination of Advanced Aromatic Hydrocarbons A.7.1 Reagents and materials

A.7.1.1 Cyclohexane.

A.7.1.2 Quinine sulfate standard solution. 1mL solution containing quinine sulfate $[(\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2)_2 \cdot \text{H}_2\text{SO}_4]$ 0.1 μg .