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

GB 28403-2012

National food safety standards of food additives -- Guar gum

食品安全国家标准 食品添加剂 瓜尔胶

(English Translation)

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1 Scope

This standard applies to the guar [Cyamopstetragonolobus (L.) Taub) endosperm film as raw material, by hydration, crushing and other steps plus Work made of the food additive guar gum.

3 Technical requirements

3.1

sensory requirements. should be consistent with the provisions of Table 1.

Table 1 sensory requirements

The project requires a test method Color white to pale yellow State powder Odor is almost tasteless or has a faint smell of beans Take appropriate sample in a clean, dry glass dish, under natural light, Observe its color and state, smell its smell

3.2

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

Table 2 Physical and chemical indicators

Item Index Test Method Viscosity/(mPa · s) Conforms to the stated A.3 in Appendix A.

Dry reduction, w /% <= 15.0 GB 5009.3 direct drying method a Ash, w /% <= 1.5 GB 5009.4 Acid insoluble matter, w /% <= 7.0 Appendix A A.4 Protein, w /% <= 7.0 GB 5009.5b

Table 2 (continued)

Item Index Test Method Lead (Pb)/(mg/kg) <= 2.0 GB 5009.12 Total arsenic (in As)/(mg/kg) <= 3.0 GB/T 5009.11 the borate test passed the test Appendix A, A.5 the starch test passes the test in Appendix A, A.6 a Drying temperature and time are 105 °C and 5h respectively.

b protein coefficient of 6.25.

3.3

Microbiological indicators. should be consistent with the provisions of Table 3.

Table 3 Microbiological indicators

Item Index Test Method Total number of colonies/(CFU/g) ≤ 5000 GB 4789.2a Escherichia coli/(MPN/g) Appendix A Testing method A.1 General provisions the reagents and water used in this standard, when not specified in other requirements, refer to the analysis of pure reagents and GB/T 6682-2008 in the provisions of the three Water level. 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 samples can be dissolved in cold, hot water, insoluble in ethanol, acetone and other organic solvents.

A.2.2 10 mL of 10 g/L borax solution was added to the sample solution and stirred immediately to form a gel that could be challenged.

A.2.3 Weigh 0.200 g of the sample in the mortar, add iodine 5g/L, potassium iodide 10g/L aqueous solution 2mL ~ 3mL, after grinding Placed on a slide, observed under a microscope, guar gum was round to pear-shaped closed unit, where the components were dyed yellow to brown.

A.3 Determination of viscosity A.3.1 Instruments and equipment A.3.1.1 Rotational viscometer.

A.3.1.2 High speed agitator.

A.3.1.3 Electric constant temperature water bath.

A.3.1.4 Electric thermostat oven.

A.3.1.5 balance (sense of 1mg).

A.3.2 Determination

The guar gum samples were placed in a drying oven at 105 ° C for 2 h to constant weight. Accurately measure the amount of 495mL water, placed in the mixing cup, open high Quick stirrer. Accurately weighed the dried sample 5.000g, slowly added to the mixing cup. Timing is started when the sample is added and stirred 5min. The prepared glue was transferred to a stoppered conical flask, placed in a 25 ° C water bath for 2h, and its viscosity was measured with a rotational viscometer.

A.4 Determination of acid insoluble matter A.4.1 Reagents and materials Filter aid. diatomaceous earth, by 105 ° C, 4h drying treatment.

A.4.2 Instruments and equipment A.4.2.1 Electric constant temperature water bath.

A.4.2.2 Electric thermostat oven.

A.4.2.3 Balance (1 mg).

A.4.2.4 ancient crucible (at 105 °C, 4h drying).

A.4.2.5 Dryer.

A.4.3 Determination

A sample of 2.000 g was weighed and dissolved in a 250 mL beaker containing 150 mL of water and 1.5 mL of sulfuric acid. Cover the beaker with a surface dish, in the boiling water bath heating 6h, heating process with glass rods often friction beaker inner wall. After heating, weigh the filter aid 0.500g, added to Samples were filtered using a known mass of the ancient crucible. The residue was washed with hot water several times and the crucible was dried at 105 ° C with the contents 4h, after cooling in a desiccator and weighed.

A.4.4 Calculation of results Acid insoluble matter in mass fraction w_1 , the value in%, according to formula (A.1) calculation.

$$w_1 = \frac{m_1 - m_2 - m_3}{m_4} \times 100\%$$

100% (A.1)

Where.

m_1 - the final mass of the total mass, in grams (g);

m_2 --- the value of filter aid quality, in grams (g);

m_3 --- crucible quality value, the unit is grams (g);

m_4 --- the value of the sample quality, in grams (g).

The experimental results 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 2.0%.

A.5 Determination of borate A.5.1 Reagents and materials A.5.1.1 hydrochloric acid solution. 10% aqueous hydrochloric acid solution.

A.5.1.2 ammonia test solution. 28% ammonia water 400mL water to 1000mL.

A.5.1.3 turmeric test paper.

A.5.2 Analysis steps Weigh the sample 1.000g, placed in a 100mL water containing 250mL beaker, stirring dissolved. Add 10 mL of hydrochloric acid solution.

Do not have the following phenomena. drop of a drop of the mixture in the turmeric test

paper appears brown red, dry after the color deepened, when the ammonia solution with wetting time into a dark green, is considered to contain borates.

A.6 Starch test

A.6.1 Reagents and materials Iodine test solution. Weigh iodine 14.000g, dissolved in aqueous solution containing 36,000 g of potassium iodide in 100mL, add three drops of hydrochloric acid, diluted with water to 1000 mL.

A.6.2 Analysis steps Weigh the sample 1.000g, placed in a 100mL water containing 250mL beaker, stirring dissolved. Add iodine test solution, no blue appear.

A.7 Colony count and determination of coliform bacteria A.7.1 Solution preparation Sterile operation, accurately weighed 1.000g guar gum, dissolved in 100mL sterile saline, prepared into 0.01 dilution solution.

A.7.2 Determination

Other steps according to GB 4789.2, GB 4789.3 coliform bacteria MPN method of the provisions of the method.