ICS 67.220.20
CCS X41

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 9990-2009

Replacing GB 9990-1988

Food nutritional fortification substance - Calcined calcium

食品营养强化剂 煅烧钙

Issued on: January 19, 2009 **Implemented on: August 1, 2009**

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Standardization Administration of China

Table of Contents

Foreword

Chapter 3 of this standard are mandatory, the rest are recommended. This standard replaces GB 9990-1988 "active food supplements of calcium." This standard compared with GB 9990-1988 The main changes are as follows:

--- The standard name be changed to "Fortified Food calcined calcium." The standard proposed by China National Light Industry Council. This standard by the National Standardization Technical Committee on Food Additives and the National Food Fermentation Standardization Center. This standard is mainly drafted by: China Food Fermentation Industry Research Institute. The main drafters of this standard. Li Huiyi, firewood Qiuer. This standard replaces the standards previously issued as follows:

--- GB 9990-1988. Fortified Food calcined calcium

1 Scope

GB 9990-2009 is the Chinese national standard on food nutritional fortification substance - calcined calcium, in the field of food technology. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 19 January 2009 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 1 August 2009. Classification: ICS 67.220.20, CCS X41. 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.

0.10 Barium (Ba dollars in) /% <=

0.03 Test Method

4 Unless otherwise indicated in the analysis using only recognized as analytical reagents and GB/T 6682 set forth in the water. Criteria used in the analysis Titration solution, impurity measurement standard solution, preparations and products, did not indicate when the other requirements, according to GB/T 601, GB/T 602, GB/T 603 provisions prepared. The standard solution in a solvent which does not indicate when formulated with, refers to an aqueous solution.

4.1 Sensory test The sample was placed in a clean, dry white porcelain dish, under natural light, the appearance was observed, and smell its flavor.

4.2 calcium content (C Rao)

1.0 Fineness (100 mesh sieve through rate) /% >=

98.5 Arsenic (As)/(mg/kg) <=

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard. Preparation of

GB/T 601 chemical reagent standard titration solution

GB/T 602 Determination of impurities in chemical reagents prepared standard solution (GB/T 602-2002,

ISO 6353-1. 1982, NEQ) with

GB/T 603 chemical reagent test method Preparations of articles (GB/T 603-2002,

ISO 6353-1 with. 1982, NEQ) Determination of

GB/T 5009.3 moisture in foods

GB/T 5009.15 Determination of cadmium in food Determination of

GB/T 5009.75 Lead in Food Additives Determination of

GB/T 5009.76 arsenic in food additives

GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008,

ISO 3696. 1987, MOD)

3 Technical requirements

3.1 Sensory requirements White odorless powder.

3.2 Physical and Chemical Requirements Shall comply with the requirements in Table 1. Table

4.2.1 Reagents and solutions

a) a solution of HCl. hydrochloric acid. water = 1/1 (volume ratio).

b) a solution of ammonium tartrate. mass fraction of 10%.

c) triethanolammonium solution. triethanolammonium. water = 1/2 (mass ratio).

d) potassium cyanide. mass fraction of 5%.

e) sodium hydroxide solution. mass fraction of 10% and 20%.

f) edetate disodium standard solution. 0.02mol/L.

g) Calcium red indicator. Weigh 0.5g of calcium red ($C_{20}H_{14}N_2O_7S$), 50g of sodium chloride was added after drying thoroughly ground in a mortar A homogeneous powder, add brown bottle to save.

4.2.2 Analysis of step Weigh about 2g sample, accurate to 0.0001g, add 25mL water. Hydrochloric acid solution was slowly added dropwise until complete dissolution, heating purge dioxide Carbon, after cooling diluted to 250mL volumetric flask placed in water. With pipette 25mL mixed solution in 250mL flask, add Diluted with water to the mark. Then pipette the solution in 25mL conical flask, 2.5mL10% ammonium tartrate solution and 5mL Triethanolamine solution. After mixing together 10mL20% sodium hydroxide solution, 5mL5% potassium cyanide solution and 0.2g calcium red indicator, 0.02mol/L disodium EDTA standard solution titration to the solution from wine red to pure blue.

4.2.3 Calculation Results Calcium content (Ca) content according to the formula (1). (1) Where. X1

--- samples calcium content (Ca) mass fraction,%; Ba concentration

--- disodium edetate standard solution, unit mole per liter (mol/L); Titration consumption volume Vp

--- disodium edetate standard solution, in milliliters (mL);

4.2.4 allowable difference Test results in two parallel arithmetic mean of the measurement results shall prevail. Twice under repeated condition absolutely independent determination results The difference may not exceed 0.2% of the arithmetic mean.

4.3 Water The method according to GB/T 5009.3 predetermined measurement.

4.8.1 Reagents and solutions

a) a solution of HCl. hydrochloric acid. water = 1/1 (volume ratio).

b) Silver nitrate solution. mass fraction of 1%.

4.8.2 Analysis of step Weigh about 5g sample, accurate to 0.0001g, placed in 500mL beaker high type. Add water, moist, gradually hydrochloric acid was added 25mL Solution. Heated to boiling, filtered hot medium speed filter paper, and then the precipitate was washed with hot water until the filtrate is chloride (with 1% silver nitrate solution sample check). The filter paper and the precipitate was transferred to constant weight of the crucible after carbonization at 850 °C ~ 900 °C burning to poor quality before and after the two can not be More than 0.0003g.

4.8.3 Calculation Results The mass fraction of a sample of hydrochloric acid-insoluble matter according to equation (3) Calculated. 100 (3) Where.

--- The X3 mass fraction of hydrochloric acid in the sample insolubles,%;

4.8.4 allowable difference Test results in two parallel arithmetic mean of the measurement results shall prevail. Twice under repeated condition absolutely independent determination results For the difference not exceed 5% of the arithmetic mean.

4.9.1 Reagents and solutions

a) anhydrous sodium acetate.

b) HCl solution. mass fraction of 10%.

c) glacial acetic acid. mass fraction of 10%.

d) Potassium chromate solution. mass fraction of 5%.

e) barium standard solution. 0.1mg/mL.

4.9.2 Analysis of step Weigh about 1g sample, accurate to 0.01g, placed in 100mL beaker. After adding water wet, 10mL10% hydrochloric acid solution was added slowly Liquid, it has completely dissolved. Heated to boiling, add 1.2g of anhydrous sodium acetate and 1mL10% glacial acetic acid solution was cooled, filtered through filter paper with medium speed 25mL colorimetric tube. Diluted with water to the mark, add 0.5mL5% potassium chromate solution, placed 15min. Compared with standard pipe, no turbidity Exceed the standard tube. Standard pipe to take 3mL0.1mg/mL barium standard solution, plus 2mL10% hydrochloric acid solution. Anhydrous sodium acetate was added from the start of the following Simultaneously with the sample treated in the same operation.