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CCS X 04



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

GB/T 14610-2008

Replacing GB/T 14610-1993

**Inspection of grain and oils -- Determination of calcium in
cereals and cereal products**

粮油检验 谷物及制品中钙的测定

(English Translation)

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Table of Contents

Foreword
1 Scope
2 Normative references
4 Reagents and materials
5 Equipment
6 Steps
6.1 Preparation of samples

Foreword

This standard replaces GB/T 14610-1993 "cereals and cereal products - Determination of calcium." this standard and GB/T 14610-1993 compared to the main changes are as follows.

- Modify the standard Chinese name, standard Chinese name to "Inspection of grain and cereal products - Determination of calcium";
- Defines the quality of the sample is 10g;
- Calcium oxalate precipitate was washed with an aqueous ammonia solution and swished the beaker;
- Filtration medium speed using quantitative ashless filter paper.

The standard proposed by the National Food Authority.

This standard by the National Standardization Technical Committee OILS.

This standard was drafted. State Administration of Grain Science Institute.

1 Scope

This standard specifies the measurement principle, reagents and materials, equipment and products calcium grain, the steps, the results of calculation and repeatability.

This standard applies to the determination of cereal products and calcium.

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 Principle 3 the samples were ashed in an acidic solution of calcium oxalate and oxalic acid generated by dissolving sulfuric acid with potassium permanganate standard solution titration, calculated the calcium content.

4 Reagents and materials

Unless otherwise stated, use only analytical reagent.

4.1

Auxiliaries. excellent pure concentrated nitric acid.

4.2

oxalic acid solution. Weigh oxalic acid ($\text{H}_2\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$) 3.9g, dissolved in 1000mL water.

4.3 0.01mol/L potassium permanganate standard solution. Weigh potassium permanganate 1.58g, was dissolved in 1000mL of water, according to GB/T 601 were Calibration.

4.4

bromocresol green indicator. Weigh 1.0g of bromocresol green dissolved in 2mL ~ 3mL of sodium hydroxide (100g/L) solution, diluted with water to 100mL.

4.5

sodium acetate solution. Weigh sodium acetate ($\text{CH}_3\text{COONa} \cdot 3\text{H}_2\text{O}$) 33g, was dissolved in 100mL of water.

4.6 6mol/L hydrochloric acid. amount of concentrated hydrochloric acid and 500mL, 500mL water was added and mixed.

4.7 0.5mol/L hydrochloric acid. amount of 80mL of hydrochloric acid (4.6), diluted to 1000mL.

4.8

ammonia solution. 1mL ammonia was added 50mL of water.

4.9

sulfuric acid solution. 5mL of concentrated sulfuric acid were added 125mL of water.

5 Equipment

Usual laboratory equipment, particularly in the following instruments.

5.1

quartz crucible or a porcelain crucible. diameter of 60mm, the volume of 35mL. If you use a porcelain crucible, requires no crack glaze, porcelain surface is smooth, fully no cracks.

5.2

high temperature resistance furnace.

5.3

speed quantitative ashless filter paper.

5.4

pulverizing mill. pulverizing the sample can enable them all through 0.45mm aperture sieve (40 mesh).

6.1 Preparation of samples

Take the sample pulverized to 0.45mm holes all through the sieve (40 mesh), prepare at least 50g sample.