

ICS 67.100.10
CCS C 53;X82



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

GB/T 5413.25-1997

Replacing GB/T 5413.25-1997

**National food safety standard -- Determination of inositol in
foods for infants and young children, milk and milk products
(English Translation)**

Issued on: March 26, 2010

Implemented on: June 1, 2010

Issued by: Ministry of Health of the People's Republic of China

Table of Contents

Foreword	
1 Scope	
2 Normative references	
4 Reagents and materials	
4.5 Medium	
4.11 Standard solution of inositol	
5 Apparatus	
6 Step, Analysis	
6.2 Sample handling	
6.3 Standard curve	
6.4 Test solution for production	
6.5 Sterilization	
6.6 Inoculation	
6.7 Training	
6.8 Determination	
7 Expression analysis	
8 Precision	
10 Reagents and materials	
11 Instruments and equipment	
12 Analysis steps	
12.1 Sample processing and Derivatives	
12.2 Preparation of the standard solution measured	
12.3 Determination	
13 Analysis results presentation	
14 Precision	

Foreword

This standard replaces GB/T 5413.25-1997 "infant formula milk powder and inositol determination." this standard compared with GB/T 5413.25-1997, the first major change in law as follows.

- A media culture collections have been corrected;

- Sample processing by the hydrochloric acid distillation method to the high pressure hydrochloric acid hydrolysis;
- By the way of inoculation broth mixed with the culture medium after dispensing tube to the dropping of the bacteria to the tube;
- Concentration of standard working solution has been adjusted;
- Sterilization temperature from 100 °C adjusted to 121 °C;
- Clear requirements and method for controlling the concentration of the bacterial suspension inoculation;
- Improve the applicability of the calculation formula;
- Increase the detection limit.

The second major change in law as follows.

- The use of inositol silylation derivatization;
- Increase the detection limit.

Appendix A of this standard and Appendix B is an informative annex.

This standard replaces the standards previously issued as follows.

--GB 5413-1985, GB/T 5413.25-1997.

National Food Safety Standard Determination of infant foods and dairy products inositol

1 Scope

This standard specifies the method for determination of infant foods and dairy products inositol.

This standard applies to food and dairy products Determination of inositol infants.

2 Normative references

The standard file referenced in the application of this standard is essential. For dated references, only the edition date of the note this applies to this standard. For undated references, the latest edition (including any amendments) applies to this standard.

The first method microbiological method Principle 3 the use of grape juice yeast (*Saccharomyces uvarum*) of inositol specificity and sensitivity, quantitative determination of the sample to be tested Substance content. In the medium containing the test substance, except for all nutrients, the content of the test substance with growth of microorganisms linearly Relations, according to the light transmittance curve is compared with the standard of work, we can calculate the amount of the substance to be detected in the sample.

4 Reagents and materials

Unless otherwise specified, the reagents used in this method are analytically pure water GB/T 6682 provisions of secondary water.

4.1

Strain. grape juice yeast (*Saccharomyces uvarum*), ATCC 9080.

4.2

inositol (myo-Inositol) Standard. Formula $C_6H_{12}O_6$, purity $\geq 99\%$.

4.3

Sodium chloride (NaCl).

4.4

Sodium hydroxide (NaOH).

4.5 Medium

4.5.1

malt extract agar medium (Malt Extract Agar). See Appendix A.

4.5.2

inositol assay medium. See Appendix A.

4.6 sodium chloride solution (9 g/L). Weigh 9.0 g of sodium chloride was dissolved in 1000 mL of water, packaging tubes, each tube 10 mL. 121 °C Sterilized 15 min.

4.7 hydrochloric acid (1 mol/L). Measure 82.0 mL of hydrochloric acid dissolved in water, cool and dilute to 1000 mL.

4.8 hydrochloric acid (0.44 mol/L). Measure 36.6 mL of hydrochloric acid dissolved in water, cool and dilute to 1000 mL.

4.9 sodium hydroxide solution (600 g/L). Weigh 300 g of sodium hydroxide dissolved in water, cool and dilute to 500 mL.

4.10 sodium hydroxide solution (1 mol/L). Weigh 40 g of sodium hydroxide dissolved in water, cool and dilute to 1000 mL.

4.11 Standard solution of inositol

4.11.1

inositol standard stock solution (0.2 mg/mL). inositol standards set containing phosphorus pentoxide desiccator 24 h or more, Weigh 50 mg of inositol standard (4.2) (accurate to 0.1 mg), water and fully dissolved, the volume to 250 mL, stored in a refrigerator.

4.11.2

inositol intermediate standard solution (10 µg/mL). draw 5 mL inositol stock standard solution (4.11.1) to volume with water to 100 mL, Stored in a refrigerator.

4.11.3

inositol working standard solution (1 µg/mL and 2 µg/mL). draw 10 mL inositol intermediate standard solution (4.11.2) twice, Water volume to 100 mL and 50 mL. The working fluid required each prepared before use.

4.12 Desiccant. phosphorus pentoxide (P₂O₅).

4.13 glass beads. diameter of about 5 mm.

5 Apparatus

In addition to the microbiological laboratory conventional sterilization and cultivation equipment, other equipment and materials as follows.

5.1

Balance. a sense of the amount of 0.1 mg.

5.2

pH meter. Accuracy ≤0.02.

5.3

Spectrophotometer.

5.4

vortex mixer.

5.5

Centrifuge. ≥2000 rpm rev/min.

5.6

incubator. 30 °C ± 1 °C.

5.7

Shaking Incubator. 30 °C ± 1 °C, shaking speed 140 times/min ~ 160 times/min.

5.8

Refrigerator. 2 °C ~ 5 °C.

5.9

sterile pipette. 10 mL (0.1 mL with scale) or micropipette or suction head.