GB

NATIONAL STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 5413.31-2013

National standard on food safety

Infant food and dairy products –

Determination of urease

Issued on: November 29, 2013 **Implemented on: June 01, 2014**

Issued by: National Family Planning Commission

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Foreword

This standard replaces GB/T 5413.31-1997 *Milk powder and formula foods for infant and young children - Qualitative detection of urease*.

As compared with GB/T 5413.31-1997, the main changes of this standard are as follows:

- MODIFY the standard name;
- ADD the storage conditions for urea solution;
- ADD the storage conditions for Nessler's reagent;
- ADD the time limit for determination results.

National standard on food safety

Food and dairy products for infant and young children

- Determination of urease

1 Scope

This standard specifies the determination methods for urease in infant foods and dairy products.

This standard applies to qualitative detection of urease in infant food and dairy urease.

2 Principles

Under the appropriate pH and temperature conditions, urease will catalyze the urea to convert into ammonium carbonate. Ammonium carbonate will, under the alkaline conditions, generate ammonium hydroxide, which will react with the potassium iodide double salt in the Nessler's reagent to produce brown double-mercury ammonium iodide.

3 Reagents and materials

Note: Unless otherwise stated, the reagents used in this standard are of analytical pure AND the water is grade III water as specified in GB/T 6682.

3.1 Reagents

3.1.1 Urea (H_2NCONH_2).

3.1.2 Sodium tungstate ($Na_2WO_4 \cdot 2H_2O$).

3.1.3 Potassium sodium tartrate ($C_4H_4O_6KNa \cdot 4H_2O$).

3.1.4 Sulfuric acid (H_2SO_4).

3.1.5 Disodium hydrogen phosphate (Na_2HPO_4).

3.1.6 Potassium dihydrogen phosphate (KH_2PO_4).

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