



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

中华人民共和国国家标准

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Replace GB/T 5413-85

**Milk powder and formula foods for infant and young
children-Qualitative detection of urease**

婴幼儿配方食品和乳粉 脲酶的定性检验

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Milk powder and formula foods for infant and young children-Qualitative detection of urease

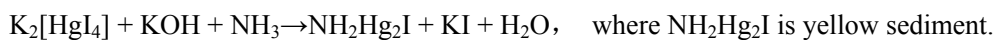
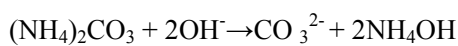
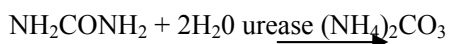
1 Scope

This standard specifies qualitative detection method of urease.

This standard applies to qualitative detection of urease in milk powder and formula foods for infant and young children.

2 Method and principle

The urease catalyzes the urea to be converted into ammonium carbonate under proper pH value and temperature. Under alkali condition, the ammonium carbonate produces ammonium hydroxide which reacts with potassium iodide composite mercury salt in Nessler's reagent to produce $\text{NH}_2\text{Hg}_2\text{I}$.



3 Reagent

- 3.1 Urea solution: 10g/L
- 3.2 Sodium tungstate solution: 100g/L
- 3.3 Potassium sodium tartrate solution: 20g/L
- 3.4 Sulphuric acid: Volumetric fraction 5%
- 3.5 Neutral buffer liquid

Take the below-mentioned sodium dihydrogen phosphate solution 611 mL and potassium dihydrogen phosphate solution 389 mL. These two kinds of solution are evenly mixed.

3.5.1 Sodium dihydrogen phosphate solution

Weigh anhydrous sodium dihydrogen phosphate by 9.47g and dissolve it into 1000mL distilled water.

3.5.2 Potassium dihydrogen phosphate solution

Weigh anhydrous sodium dihydrogen phosphate by 9.07g and dissolve it into 1000mL distilled water.

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