



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

**中华人民共和国国家标准**

GB 5413.22-2010

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**National food safety standard  
Determination of phosphorus in foods for infants and  
young children, milk and milk products**

**食品安全国家标准**

**婴幼儿食品和乳品中磷的测定**

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## Foreword

This standard Replacing GB/T 5413.22 - 1997 *Determination of phosphorus in formula and milk powder for infants and young children.*

Comparison with GB/T 5413.22-1997, main changes of this Standard are as follows:

- Digestion of three strong acids 'nitric acid-sulphuric acid-perchloric acid' is changed into the digestion of nitric acid-perchloric acid.

This standard substitutes all previous standards as follows:

- GB 5413 - 1985, GB/T 5413.22- 1997.

# National food safety standard

## Determination of phosphorus in foods for infants and young children, milk and milk products

### 1. Scope

This standard specifies the method for the determination of phosphorus in foods and dairy products for infants and young children.

This standard applies to the determination of phosphorus in foods and dairy products for infants and young children.

### 2. Normative References

The normative documents referenced in the text are indispensable to the application of this standard. For dated references, only the edition bearing such date applies to this standard. For undated references, the latest edition of the normative document referred to (including all the amendments) applies.

### 3. Principles

Samples are subjected to acid oxidation to make phosphorus react with vanadium-ammonium molybdate and form yellow complex compound in nitric acid solution. Spectrophotometer is used to determine the absorbance at the wavelength of 440 nm with an aim to quantitatively analyze the content of phosphorus.

### 4. Reagents and materials

Unless specified, all reagents used in this method are analytical reagents, and water is the 3<sup>rd</sup> grade water specified by GB/T6682.

**4.1** Nitric acid: guaranteed reagent

**4.2** Vanadium-ammonium molybdate [ $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}$ ]: guaranteed reagent

**4.3** Phenol ( $\text{C}_6\text{H}_5\text{O}$ )

**4.4** Sodium metavanadate ( $\text{NH}_4\text{VO}_3$ )

**4.5** Sodium hydrate ( $\text{NaOH}$ )

**4.6** Standard solution of potassium dihydrogen phosphate ( $\text{KH}_2\text{PO}_4$ )

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