



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

中华人民共和国国家标准

GB 5413.11-2010

National food safety standard

**Determination of vitamin B₁ 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维生素 B₁ 的测定

Issued on Mar 26, 2010

Implemented on Jun 01, 2010

Issued by the Ministry of Health of P.R of China

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Foreword

This standard replaces GB/T 5413.11-1997, *Milk powder and formula foods for infants and young children - Determination of vitamin B₁ content*.

Comparison to GB/T 5413.11-1997, the main changes specified by this standard are as follows:

- This standard is named as *Determination of vitamin B₁ in foods for infants and young children, milk and milk products*;
- Method I (fluorescence spectrophotometry) in the previous edition of standard deleted;
- The arrangement of the previous edition of standard modified;
- Quantification of external standard method adopts multi-point standard curve method;
- Specify vitamin B₁ content as thiamine when calculating results;
- Add liquid chromatogram of reference standard in Annex A

Annex A of this standard is informative.

This standard replaces the following historical editions issued:

- GB/T 5413-1985, GB/T 5413.11-1997

National food safety standard

Determination of vitamin B₁ in foods for infants and young children, milk and milk products

1. Scope

This standard specifies determination method of vitamin B₁ in foods for infants and young children, milk and milk products.

This standard applies to determination of vitamin B₁ in foods for infants and young children, milk and milk products.

2. Normative references

The following normative documents for application of this document are indispensable. For dated references, only the dated edition applies to this document. For undated references, the latest edition (including all amendments) applies.

3. Principle

The sample generates hydrolysis and enzymolysis at constant temperature under a hydrochloric – acid environment. The sample liquid is derived with basic potassium ferricyanide and extracted with n-butanol (or iso - butanol) and then is separated through C₁₈ reverse- phase chromatographic column. Use a fluorescence detector (Ex: 375 nm, Em: 435 nm) to detect it and quantify it in external standard method.

4. Reagents and materials

Unless otherwise specified, all the reagents used in this method are analytically pure and water is Class I in accordance with GB/T 6682.

- 4.1 N-butanol or iso – butanol;
- 4.2 Potassium ferricyanide;
- 4.3 Sodium hydroxide;
- 4.4 Concentrated hydrochloric acid;

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