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National Standard of the People’s Republic of China

GB 5009.84–2016

National Food Safety Standard

Determination of Vitamin B1 in Foods

食品安全国家标准

食品中维生素 B1 的测定

Date of Publication: Aug. 31, 2016  Date of Implementation: Mar. 1, 2017

Issued by:

National Health and Family Planning Commission of the People’s Republic of China
Preface


Compared with GB/T 5009.84–2003, the major changes of this standard are as follows:

—— the name of the standard has been modified to “National food safety standard Determination of vitamin B1 in foods”.
—— the HPLC method has been added and taken as Method I; Fluorescence Spectrophotometry has been taken as Method II;
—— the expression for “limit of detection” has been modified and the “limit of quantitation” has been added;
— — the qualitative identification method for chloride ion during pre–treatment of artificial zeolite has been added;
—— the features for changes in solution color (bromocresol green as indicator) have been added;
— — the structure chart of Figure 1 (reaction flask) and Figure 2 (base–exchange tube) has been deleted;
—— the weighed amount of artificial zeolite, expressed as wet weight, has been added;
National Food Safety Standard  
Determination of Vitamin B1 in Foods

1. Scope

This standard specifies the methods for determination of vitamin B₁ in foods: HPLC method and Fluorescence Spectrophotometry;

This standard applies to the determination of vitamin B₁ content in foods;

   Method I High Performance Liquid Chromatography

2. Principles

In the presence of diluted hydrochloric acid medium, the sample is thermostatically hydrolyzed and neutralized and then enzymolysed; after derivatization of alkaline potassium ferricyanide solution and extraction of n-butanol, the hydrolysate is then separated from C18 reversed phase column, detected with HPLC-fluorescence detector and quantitatively determined by external standard method.

3. Reagents and Materials

Unless otherwise specified, all the reagents used in this method are analytically pure reagents and water is Grade 1 water specified in GB/T 6682.

3.1 Reagents

3.1.1 n-butanol (CH₃CH₂CH₂CH₂OH);

3.1.2 Potassium ferricyanide [K₃Fe(CN)₆];

3.1.3 Sodium hydroxide (NaOH);
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<thead>
<tr>
<th>Membership</th>
<th>Information</th>
<th>Knowledge</th>
<th>Database</th>
<th>E-publication</th>
<th>Other discount (offline conference, on-demand translation &amp; consultation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>News</td>
<td>Newsletter</td>
<td>Alerts</td>
<td>Food pedia</td>
<td>Expert article</td>
</tr>
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<td></td>
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</tbody>
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