

ICS 67.060
CCS X 04



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

GB/T 7628-2008

Replacing GB/T 7628-1987

Determination of vitamin B1 in cereals

谷物中维生素B1测定

(English Translation)

Issued on: May 27, 2008

Implemented on: October 1, 2008

Issued by: Standardization Administration of China

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Foreword

This standard reference AACCMethod86-80 "Thiamine-ThiochromeMethod" (2000, in English).

This standard is GB/T 7628-1987 "Determination of cereal Vitamin B1" amendments.

This standard and GB/T 7628-1987 The main differences are as follows.

- Test water should comply with the provisions of GB/T 6682 water in three specifications;
- Provides for sampling, sub-sampling method;
- Hydrochloric acid hydrolysis to sulfuric acid hydrolysis;
- Increased use of ion exchange resins;
- N-butanol solvent to isobutanol solvent;
- Extract light color, without interfering substances, without purification step;
- Canceled on a dry basis of the requirements of the measurement results;
- Increased vitamin B1 content is calculated not by purification of the sample;
- Increased requirements for the determination of Vitamin B1 repetitive cereal when low levels.

The standard proposed by the National Food Authority.

This standard by the National Standardization Technical Committee OILS.

This standard was drafted. the National Food Authority feed grain Wuhan Quality Supervision and Inspection Center.

1 Scope

This standard specifies the principle of fluorescence spectrophotometer grains of vitamin B1, reagents and materials, equipment, sample preparation, Step analysis, the results of calculation and repeatability.

This standard applies to the determination of grains of vitamin B1.

The standard detection limit of 0.05μg.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB 5491 grain and oilseeds testing for sampling, and sample method GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-1992, neq ISO 3696. 1987)

Principle 3 the sample was dilute sulfuric acid, starch decomposing enzyme solution of vitamin B1 (thiamin, C₁₂H₁₇ON₄SCl) is potassium ferricyanide under alkaline conditions Oxidation of sulfur dye, that is a fluorescent dye. Proportional to the sulfur content of the pigment in the isobutanol in fluorescence intensity in the sample of vitamin B1, and so Determination of vitamin B1 content.

4 Reagents and materials

Unless otherwise specified, the reagents were of analytical grade, test water should be consistent with GB/T 6682 in the three water specifications.

4.1 Hydrochloric acid

Take 205g 340g of anhydrous sodium acetate or hydrated sodium acetate (CH₃COONa · 3H₂O) dissolved in water and diluted to 1000mL.

4.3 Acetic acid solution Ba (CH₃COOH) = 3% (volume fraction)

Take 30mL glacial acetic acid diluted with water to 1000mL.

Weigh 250g of potassium chloride dissolved in water and diluted to 1000mL.

Weigh 1g silver nitrate was dissolved in water and dilute to 100mL.

Take 6g amylase preparation (takadiastase), and its activity was equivalent activity or other 1.250 phosphatase, using 2.5mol/L B Sodium solution (4.2) prepare a suspension, diluted

to 100mL, that day prepared the day of use.

4.7.1 Active zeolite

The zeolite according to the provisions of the sieve filter layer, weighed through the upper sieve (aperture 0.297mm, 50 mesh), is retained in the lower sieve (aperture 0.177mm, 80 mesh zeolite 100g) in the Buchner funnel, with 3% of hot acetic acid (4.3, about 50 °C) solution was washed 15min, should make Acid remains in contact with the zeolite 10min ~ 15min, acetate, vacuum filtration using a vacuum pump; and then 0.25g/mL of hot potassium chloride solution (4.4, about 50 °C) 250mL washing; and finally with hot water (about 50 °C) was washed until the eluate does not appear when using silver nitrate (4.5) inspection