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

中华人民共和国国家标准

GB/T 5009.13-2003
Replaced GB/T 5009.13-1996

Determination of copper in foods
食品中铜的测定

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Foreword

This standard substitute for GB/T 5009.13 -1996 - *Determination method of copper in foods*

Compared with GB/T5009.13-1996, main changes of this Standard as follows:

- The Chinese name of this standard is modified into *Determination of copper in foods*;
- The structure of original standard is modified according to GB/T 20001.4-2001: *Rules for Drafting Standards –Part 4: Method of Chemical Analysis*.

This standard is put forward and governed by the Ministry of Health of the People's Republic of China.

The first method of this standard was drafted by Food Hygiene Control Institute of the Health Ministry and the Health and Epidemic Prevention Station of Tianjin City.

The second method of this standard was drafted by the Health and Epidemic Prevention Station of Tianjin City, the Health and Epidemic Prevention Station of Hunan Province, and the Health and Epidemic Prevention Station of Zhejiang Province.

This standard was issued for the first time in 1985, was revised for the first time in 1996. And this is the second revision.

Determination of copper in foods

1 Scope

This standard specifies the determination method for copper in foods.

This standard is applicable to the determination of copper in foods.

The detection limits of this method are: 1.0 mg/kg for flame atomization method; 0.1 mg/kg for graphite furnace atomization method; and 2.5 mg / kg for the colorimetry method.

2 Normative References

The articles contained in the following documents have become the articles of this Standard after they are cited herein. For the dated documents so cited, all the modification list (excluding correction) or revised editions made thereafter shall not be applicable to this Standard, but all parties who have concluded agreements on the basis of this Standard are encouraged to study the possibility to implement the latest version of these documents. For the undated documents so cited, the latest version shall be applicable to this Standard.

GB/T 5009.11 -2003 Determination of total arsenic and inorganic arsenic in foods

Method I – Atomic Absorption Spectrometry

3 Principle

The test sample will be introduced into the atomic absorption spectrophotometer after treatment, and absorb the resonance line of 324.8nm after atomization. The absorption value is in proportion to the copper content, and is compared with the standard series for quantification.

4 Reagent

4.1 Nitric acid.

4.2 Ligroin.

4.3 Nitric acid (10%) : Take 10mL nitric acid into water with appropriate amount, then dilute it to 100mL.

4.4 Nitric acid (0.5%): Take 0.5mL nitric acid into water with appropriate amount, then dilute it to 100mL.

4.5 Nitric acid (1 +4).

4.6 Nitric acid (4+6): Take 40mL nitric acid into water with appropriate amount, then dilute it to 100mL.

4.7 Standard copper solution: Accurately weigh 1.0000 g metal copper (99.99%), add it in several times into nitric acid (4 +6) solution, the total amount shall not exceed 37mL, then move it into a 1000mL-measuring flask, and dilute by water till to the 1000mL-mark. This solution contains 1.0mg copper/mL.

4.8 Standard copper solution I: Absorb 10.0mL standard copper solution to put into a 100mL-measuring flask, then dilute by 0.5% nitric acid solution till to the 100mL-mark, shake it up. Repeat it for several times till it is diluted to a concentration of 1.0 μ g copper per mL.

4.9 Standard copper solution D: Dilute the solution to a concentration of 0.10 μ g copper per mL using the method described in 4.8.

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