



GB 5009.138-2024

National Food Safety Standard

Determination of Nickel in Food

食品安全国家标准 食品中镍的测定

National Health Commission of the People's
Republic of China
State Administration for Market Regulation

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Translated by ChemLinked

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National Standard of the People's Republic of China

GB 5009.138-2024
In Replacement of GB 5009.138-2017

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食品安全国家标准

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Foreword

This standard replaces GB 5009.138-2017 “National Food Safety Standard - Determination of Nickel in Foods”.

Compared with GB 5009.138-2017, the main changes of this standard are as follows:

- Added Method 2, inductively coupled plasma mass spectrometry;
- Added Method 3, inductively coupled plasma optical emission spectrometry;
- Modified the descriptions of standard solution preparation, storage conditions and temperature, sample weighing range and precision.

National Food Safety Standard

Determination of Nickel in Food

1 Scope

This standard specifies the determination method of nickel in food by graphite furnace atomic absorption spectrometry, inductively coupled plasma mass spectrometry and inductively coupled plasma emission spectrometry.

This standard applies to the determination of nickel in foods.

Method 1: Graphite Furnace Atomic Absorption Spectrometry

2 Principle

After the sample was digested and atomized in a graphite furnace, the absorbance was measured at 232.0 nm. Within a certain concentration range, the absorbance value of nickel is proportional to the nickel content and is quantified using the external standard method.

3 Reagents and materials

Unless otherwise specified, all reagents used in this method are of high purity and the water is Grade 2 water as specified in GB/T 6682.

3.1 Reagents

3.1.1 Nitric acid (HNO_3).

3.1.2 Perchloric acid (HClO_4).

3.1.3 Palladium nitrate [$\text{Pd}(\text{NO}_3)_2$].

3.1.4 Ammonium dihydrogen phosphate ($\text{NH}_4\text{H}_2\text{PO}_4$).

3.2 Reagent preparation

3.2.1 Nitric acid solution (5 + 95): measure 50 mL of nitric acid, slowly add it into 950 mL of water and mix well.



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