



GB 5009.15-2023

National Food Safety Standard

Determination of Cadmium in Food

食品安全国家标准 食品中镉的测定

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

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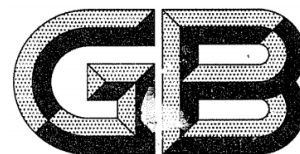
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National Standard of the People's Republic of China

GB 5009.15-2023
In Replacement of GB 5009.15-2014

National Food Safety Standard

Determination of Cadmium in Food

食品安全国家标准

食品中镉的测定

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

Foreword

This standard replaces GB 5009.15-2014 "National Food Safety Standard Determination of Cadmium in Food".

Compared with GB 5009.15-2014, the main changes of this standard are as follows:

- The second method "Inductively coupled plasma mass spectrometry" was added;
- Annex A "Microwave digestion heating program and graphite furnace atomic absorption spectrometry instrument reference conditions" was added;
- The sample preparation was modified;
- The wet digestion method, pressure tank digestion method and microwave digestion method were modified, and the dry digestion method was deleted;
- The matrix modifier for graphite furnace atomic absorption spectrometry was modified.

National Food Safety Standard

Determination of Cadmium in Food

1. Scope

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

This standard applies to the determination of cadmium in food.

Method 1: Graphite Furnace Atomic Absorption Spectrometry

2. Principle

After the sample was digested, it was atomized in a graphite furnace and the absorbance is measured at 228.8 nm. Within a certain concentration range, the absorbance value of cadmium is proportional to the cadmium content and can be quantitatively compared with a standard series of solutions.

3. Reagents and Materials

Unless otherwise specified, all reagents used in this method are of high purity and the water is secondary 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 Ammonium dihydrogen phosphate ($\text{NH}_4\text{H}_2\text{PO}_4$).

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

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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