National Standard of the People's Republic of China

GB 5009.12-2010

National Food Safety Standard

Determination of Lead in Foods

食品安全国家标准

食品中铅的测定

Issued on March 26, 2010 **Implemented on June 01, 2010**

Issued by the Ministry of Health of the People's Republic of China

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Foreword

The standard substitutes the GB/T 5009.12-2003 *Determination of Lead in Foods*

Annex A of this Standard is informative.

The releases of all editions substituted by this Standard are as follows:

—GB/T 5009.12-1985, GB/T 5009.12-1996, GB/T 5009.12-2003.

National Food Safety Standard

Determination of Lead in Foods

1. Scope

This Standard specifies the method for the determination of lead in foods.
This Standard applies to the determination of lead in foods.

2. Normative References

The reference documents of this Standard are indispensible to the Standard's application. For the dated reference documents, all later amendments (including all corrigenda) and revised versions apply to this Standard.

Method 1: Graphite furnace atomic absorption spectrometry

3. Principle

After ashing or acid digestion, the sample is injected into the graphite furnace of atomic absorption spectrophotometer. It then absorbs the resonance line at 283.3 nm after electrothermal atomization. In certain concentration range, the absorption is proportional to lead content, and is used to yield quantitative lead content on the basis of comparison with standard series.

4. Reagents and Materials

Unless otherwise specified, all reagents for this method are analytically pure, the water is Class I water specified in GB/T 6682.

4.1 Nitric acid: guarantee reagent.

4.2 Ammonium persulfate.

4.3 Hydrogen peroxide (30%).

4.4 Perchloric acid: guarantee reagent.

4.5 Nitric acid (1+1): 50 mL of nitric acid is slowly added into 50 mL of water.

4.6 Nitric acid (0.5 mol/L): 3.2 mL of nitric acid is added into 50 mL of water and then diluted to 100 mL.

4.7 Nitric acid (1 mol/L): 6.4 mL of nitric acid is added into 50 mL of water and then diluted to 100 mL.

4.8 Ammonium phosphate solution (20g/L): 2.0 g of ammonium phosphate is weighed, dissolved in water and then diluted to 100 mL.

4.9 Mixed acid: Nitric acid + perchloric acid (9+1). 9 equivalent of nitric acid is mixed with 1 equivalent of perchloric acid.

4.10 Standard lead stock solution: 1.000 g of lead (99.99%) is weighed accurately, added with a small amount of nitric acid (1+1) for several times and heated to dissolve. The total volume of

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