



GB 5009.16-2014

National Food Safety Standard Determination of Tin in Foods

食品安全国家标准 食品中锡的测定

National Health and Family Planning
Commission of the People's Republic of China

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Translated by ChemLinked

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National Standard of the People's Republic of China

GB 5009.16-2014

National food safety standard Determination of tin in foods 食品安全国家标准 食品中锡的测定

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Foreword

This standard replaces GB/T 5009.16-2003 "Determination of tin in foods".

Compared with GB/T 5009.16-2003, the major changes of this standard are as follows:

- the name of standard has been modified to "National food safety standard Determination of tin in foods";
- the preparation of standard solution has been modified;
- the preparation method of test sample for canned food has been added;
- the description of apparatus determination part has been modified;
- the limit of quantitation has been added;
- the limit of detection has been modified;
- the calculation formula has been modified.

National food safety standard

Determination of tin in foods

1 Scope

This standard specifies the determination of tin in foods by Hydride Atomic Fluorescence Spectrometry and Phenylfluorone Colorimetry.

This standard applies to the determination of tin in canned solid foods, canned beverages, canned jams as well as canned formula and complementary foods for infants and young children.

Method I Hydride Atomic Fluorescence Spectrometry

2 Principles

After being digested, the test sample reacts with sodium borohydride and generates tin hydride (SnH_4), and then it is carried into the atomizer by carrier gas for atomization; under irradiation of tin hollow cathode lamp, the ground state tin atoms are stimulated to a high energy state, and further deactivated back to ground state, emitting fluorescence of characteristic wavelength; the fluorescence intensity is in direct proportion to the tin content and then quantitative analysis is carried out compared with standard series solution.

3 Reagents and Materials

Note: Unless otherwise specified, the reagents used in this method are analytical reagents and water used is Grade 2 water stipulated in GB/T 6682.

3.1 Reagents

3.1.1 Sulfuric acid (H_2SO_4): guarantee reagent.

3.1.2 Nitric acid (HNO_3): guarantee reagent.

3.1.3 Perchloric acid (HClO_4): guarantee reagent.

3.1.4 Thiourea ($\text{CH}_4\text{N}_2\text{S}$).

3.1.5 Ascorbic acid ($\text{C}_6\text{H}_8\text{O}_6$).

3.1.6 Sodium borohydride (NaBH_4).

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