

ICS 67.080.01

English Version

Foodstuffs - Determination of trace elements - Determination of tin in fruit and vegetables preserved in cans by flame atomic absorption spectrometry (AAS)

Produits alimentaires - Dosage des éléments traces - Détermination de l'étain dans les fruits et légumes en boîtes de conserve par spectrométrie d'absorption atomique flamme (SAA)

Lebensmittel - Bestimmung von Elementspuren - Bestimmung von Zinn in Obst- und Gemüsekonserven mit Flammen-Atomabsorptionsspektrometrie (AAS)

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Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Principle.....	4
4 Reagents.....	4
5 Apparatus and equipment	5
6 Sampling.....	5
7 Procedure	5
8 Evaluation and calculation	6
9 Limit of determination	6
10 Repeatability and reproducibility	6
11 Test report	7
Annex A (informative) Results of the inter-laboratory test	8
Annex B (informative) Results of proficiency tests	9
Bibliography	10

Foreword

This document (CEN/TS 15506:2007) has been prepared by Technical Committee CEN/TC 275 “Food analysis — Horizontal methods”, the secretariat of which is held by DIN.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this CEN Technical Specification: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This document specifies a method for the determination of tin in vegetable foods preserved in cans by flame atomic absorption spectrometry (AAS).

This method is applicable to the determination of extractable tin in fruits and vegetables and collaboratively tested in concentrations from 25 mg/kg to 350 mg/kg. It is a method for determination of tin in canned fruit and vegetables contaminated with migrated tin from the can. The method can be applied with the prescribed amount of sample to products with a maximum total dry matter of 30 %. Products with higher total solid contents may be analysed using sample amounts less than 30 % after corresponding dilution with deionised water.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13804, *Foodstuffs – Determination of trace elements – Performance criteria, general considerations and sample preparation*

3 Principle

Canned fruit and vegetables are extracted with hydrochloric acid at 80 °C and the tin content is determined by flame atomic absorption spectrometry.

WARNING — Use of this standard may involve hazardous materials, operations and equipment. This standard does not purport to address all the safety problems associated with its use, thus it is the responsibility of the user to establish appropriate safety and health practices and determine the applicability or regulatory limitations prior to use.

4 Reagents

4.1 General

The concentration of tin in the reagents and water used shall be low enough not to affect the results of determination.

4.2 Hydrochloric acid

Mass fraction $w \geq 30$ %, with a mass concentration of approximately $\rho(\text{HCl}) = 1,15$ g/ml.

4.3 Hydrochloric acid, substance concentration $c = 6$ mol/l

Dilute 50 ml of hydrochloric acid (4.2) with water to 100 ml.

4.4 Tin stock standard solution, in hydrochloric acid (4.3), mass concentration $\rho(\text{Sn}) = 1\ 000$ mg/l.

The use of a certified stock solution is advisable.