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ZINC AND ZINC ALLOYS - CHEMICAL ANALYSIS - PART 8: DETERMINATION OF TIN IN SECONDARY ZINC - FLAME ATOMIC ABSORPTION SPECTROMETRIC METHOD

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Zink und Zinklegierungen - Chemische Analyse - Teil 8: Bestimmung von Zinn in Sekundärzink - FAAS-Verfahren

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Foreword

This document (EN 12441-8:2004) has been prepared by Technical Committee CEN/TC 209 “Zinc and zinc alloys”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

Within its programme of work, Technical Committee CEN/TC 209 entrusted CEN/TC 209/WG 6 "*Methods of analysis and testing*" to prepare the following document:

EN 12441-8, *Zinc and zinc alloys – Chemical analysis – Part 8: Determination of tin in secondary zinc – Flame atomic absorption spectrometric method*

This document is a part of a series of eleven standards. The other documents are:

— *Part 1: Determination of aluminium in zinc alloys – Titrimetric method*

— *Part 2: Determination of magnesium in zinc alloys – Flame atomic absorption spectrometric method*

— *Part 3: Determination of lead, cadmium and copper – Flame atomic absorption spectrometric method*

— *Part 4: Determination of iron in zinc alloys – Spectrophotometric method*

— *Part 5: Determination of iron in primary zinc – Spectrophotometric method*

— *Part 6: Determination of aluminium and iron – Flame atomic absorption spectrometric method*

— *Part 7: Determination of tin – Flame atomic absorption spectrometric method after extraction*

— *Part 9: Determination of nickel in zinc alloys – Flame atomic absorption spectrometric method*

— *Part 10: Determination of chromium and titanium in zinc alloys – Spectrophotometric method*

— *Part 11: Determination of silicon in zinc alloys – Spectrophotometric method*

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1 Scope

This document specifies a flame atomic absorption spectrometric method for the determination of tin in secondary zinc. It is applicable to the products specified in EN 13283.

It is suitable for the determination of tin contents (mass fractions) between 0,1 % and 1,0 %.

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 12060:1997, *Zinc and zinc alloys – Method of sampling – Specifications*

EN 13283, *Zinc and zinc alloys – Secondary zinc*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12060:1997 and the following apply.

3.1
flame atomic absorption spectrometry
measurement of the absorption of an electromagnetic radiation, emitted by an element at a determined wavelength, by an absorbent medium (flame) formed by atoms of the same element that are in the ground state. Each element absorbs radiation of specific wavelengths and the intensity of the absorbed radiation is proportional to the concentration of said element

4 Principle

A sample of the metal is dissolved in a mixture of hydrochloric acid and hydrogen peroxide and, after adequate dilution and atomisation of the solution in a nitrous oxide-acetylene flame, the content of tin is determined by atomic absorption spectrometry at the wavelength of 235,5 nm.

5 Reagents

5.1 General

During the test, use only reagents of known or analytical grade and distilled or demineralised water.

5.2 Hydrochloric acid, ρ = 1,19 g/ml.

5.3 Nitric acid, ρ = 1,4 g/ml.

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