

National Standards Authority of Ireland

ZINC AND ZINC ALLOYS - CHEMICAL

SPECTROPHOTOMETRIC METHOD

SILICON IN ZINC ALLOYS -

ANALYSIS - PART 11: DETERMINATION OF

IRISH STANDARD

I.S. EN 12441-11:2006

ICS 77.120.60

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This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on: 4 October 2006

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EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN 12441-11

August 2006

ICS 77.120.60

English Version

Zinc and zinc alloys - Chemical analysis - Part 11: Determination of silicon in zinc alloys - Spectrophotometric method

Zinc et alliages de zinc - Analyse chimique - Partie 11 : Dosage du silicium dans les alliages de zinc - Méthode spectrophotométrique Zink und Zinklegierungen - Chemische Analyse - Teil 11: Bestimmung von Silicium in Zinklegierungen -Spektrophotometrisches Verfahren

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Ref. No. EN 12441-11:2006: E

EN 12441-11:2006 (E)

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Foreword

This document (EN 12441-11:2006) 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of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

Within its programme of work, Technical Committee CEN/TC 209 entrusted CEN/TC 209/WG6 "Methods of analysis and testing" to prepare the following document:

EN 12441-11, Zinc and zinc alloys – Chemical analysis – Part 11: Determination of silicon in zinc alloys – Spectrophotometric method.

This standard is a part of a series of eleven standards. The other standards 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 8: Determination of tin in secondary zinc Flame atomic absorption spectrometric method
- 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

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1 Scope

This European Standard specifies a spectrophotometric method for the determination of silicon in zinc alloys. It is applicable to the products specified in EN 1774 and EN 12844.

It is suitable for the determination of silicon contents (mass fractions) between 0,01 % and 0,1 %.

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 1774, Zinc and zinc alloys – Alloys for foundry purposes – Ingot and liquid

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

EN 12844, Zinc and zinc alloys - Castings - Specifications

3 Terms and definitions

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

4 Principle

Direct spectrophotometric determination of silicomolybdenum blue after dissolution of the sample in hydrochloric and hydrofluoric acid.

5 Reagents

5.1 General

During the test, use only reagents of known analytical grade.

- 5.2 Bidistilled water (for preparation and dilution of all solutions)
- **5.3** Hydrochloric acid, $\rho = 1,19$ g/ml
- **5.4** Hydrofluoric acid, $\rho = 1,13$ g/ml
- 5.5 Boric acid
- 5.6 Ammonium molybdate (NH₄)₆Mo₇O₂₄. 4H₂O
- 5.7 Sodium metabisulfite Na₂S₂O₅
- 5.8 Sodium sulfite Na₂SO₃
- 5.9 1-amino-2-naphtol-4-sulfonic acid



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