

Zink och zinklegeringar – Kemisk analys –
Del 6: Bestämning av aluminium och järn –
Spektrometrisk flamatombabsorptionsmetod

Zinc and zinc alloys – Chemical analysis –
Part 6: Determination of aluminium and iron –
Flame atomic absorption spectrometric method

Europastandarden EN 12441-6:2003 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 12441-6:2003.

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English version

**Zinc and zinc alloys - Chemical analysis - Part 6: Determination
of aluminium and iron-Flame atomic absorption spectrometric
method**

Zinc et alliages de zinc - Analyse chimique - Partie 6:
Dosage de l'aluminium et du fer-Méthode par spectrométrie
d'absorption atomique dans la flamme

Zink und Zinklegierungen - Chemische Analyse - Teil 6:
Bestimmung von Aluminium und Eisen - FAAS-Verfahren

This European Standard was approved by CEN on 21 November 2002.

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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 12441-6:2003) 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of an identical text or by endorsement, at the latest by September 2003, and conflicting national standards shall be withdrawn at the latest by September 2003.

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

EN12441-6, Zinc and zinc alloys - Chemical analysis - Part 6: Determination of aluminium and iron - Flame atomic absorption spectrometric method.

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

- EN 12441-1, *Zinc and zinc alloys – Chemical analysis – Part 1: Determination of aluminium in zinc alloys – Titrimetric method;*
- EN 12441-2, *Zinc and zinc alloys – Chemical analysis – Part 2: Determination of magnesium in zinc alloys – Flame atomic absorption spectrometric method;*
- EN 12441-3, *Zinc and zinc alloys – Chemical analysis – Part 3: Determination of lead, cadmium and copper – Flame atomic absorption spectrometric method;*
- EN 12441-4, *Zinc and zinc alloys – Chemical analysis – Part 4: Determination of iron in zinc alloys – Spectrophotometric method.*
- EN 12441-5, *Zinc and zinc alloys – Chemical analysis – Part 5: Determination of iron in primary zinc – Spectrophotometric method;*
- prEN 12441-7, *Zinc and zinc alloys – Chemical analysis – Part 7: Determination of tin – Flame atomic absorption spectrometric method after extraction;*
- prEN 12441-8, *Zinc and zinc alloys – Chemical analysis – Part 8: Determination of tin in secondary zinc – Flame atomic absorption spectrometric method;*
- prEN 12441-9, *Zinc and zinc alloys – Chemical analysis – Part 9: Determination of nickel in zinc alloys – Flame atomic absorption spectrometric method;*
- prEN 12441-10, *Zinc and zinc alloys – Chemical analysis – Part 10: Determination of chromium and titanium in zinc alloys – Spectrophotometric method;*
- prEN 12441-11, *Zinc and zinc alloys – Chemical analysis – Part 11: Determination of silicon in zinc alloys – Spectrophotometric method;*

Annex A is normative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

EN 12441-6:2003 (E)

1 Scope

This European Standard specifies a flame atomic absorption spectrometry method in zinc and zinc alloys for the determination of aluminium and iron. It is applicable to the products specified in EN 988, EN 1179, EN 1774, EN 12844 and EN 13283.

It is suitable for the determination of iron contents (mass fractions) between 0,001 % and 0,5 % and aluminium contents (mass fractions) between 0,000 5 % and 0,5 %.

NOTE EN 12441-1 specifies a method for the determination of aluminium contents (mass fractions) between 3 % and 30 %.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 988, *Zinc and zinc alloys - Specifications for rolled flat products for building.*

EN 1179, *Zinc and zinc alloys - Primary zinc.*

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.*

EN 13283, *Zinc and zinc alloys - Secondary zinc.*

3 Terms and definitions

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

flame atomic absorption spectrometry

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

4 Principle

A sample of the metal or alloy is dissolved in hydrochloric acid and, after adequate dissolution and atomisation of the solution in an air-acetylene (or nitrous oxide-acetylene) flame, the content of the particular component is determined by atomic absorption spectrometry.

The wavelengths of the spectral lines are shown in annex A.