



NSAI
Standards

Irish Standard
I.S. EN 15690-2:2009

Copper and copper alloys -
Determination of iron content - Part 2:
Flame atomic absorption spectrometric
method (FAAS)

I.S. EN 15690-2:2009

Incorporating amendments/corrigenda issued since publication:

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English Version

Copper and copper alloys - Determination of iron content - Part 2: Flame atomic absorption spectrometric method (FAAS)

Cuivre et alliages de cuivre - Dosage du fer - Partie 2 :
Méthode par spectrométrie d'absorption atomique dans la
flamme (SAAF)

Kupfer und Kupferlegierungen - Bestimmung des
Eisengehaltes - Teil 2:
Flammenatomabsorptionsspektrometrisches Verfahren
(FAAS)

This European Standard was approved by CEN on 26 December 2008.

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Foreword

This document (EN 15690-2:2009) has been prepared by Technical Committee CEN/TC 133 "Copper and copper alloys", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

Within its programme of work, Technical Committee CEN/TC 133 requested CEN/TC 133/WG 10 "Methods of analysis" to prepare the following standard:

EN 15690-2, Copper and copper alloys — Determination of iron content — Part 2: Flame atomic absorption spectrometric method (FAAS)

This is one of two Parts of the standard for the determination of iron content in copper and copper alloys. The other Part is:

EN 15690-1, Copper and copper alloys — Determination of iron content — Part 1: Titrimetric method

Part 1 will be the subject of future work.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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.

1 Scope

This Part of this European Standard specifies a flame atomic absorption spectrometric method (FAAS) for the determination of the iron content of copper and copper alloys in the form of castings or unwrought or wrought products.

The method is applicable to products having iron mass fractions between 0,005 % and 5,0 %.

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.

ISO 1811-1, *Copper and copper alloys — Selection and preparation of samples for chemical analysis — Part 1: Sampling of cast unwrought products*

ISO 1811-2, *Copper and copper alloys — Selection and preparation of samples for chemical analysis — Part 2: Sampling of wrought products and castings*

NOTE Informative references to documents used in the preparation of this standard, and cited at the appropriate places in the text, are listed in the Bibliography.

3 Principle

Dissolution of a test portion in a hydrochloric and nitric acid mixture followed, after suitable dilution and the addition of lanthanum chloride to mask the effect of interfering ions, by aspiration of the test solution into an air/acetylene flame of an atomic absorption spectrometer. Measurement of the absorption of the 248,3 nm or the 372,0 nm line emitted by an iron hollow-cathode lamp.

4 Reagents and materials

4.1 General

During the analysis, use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

Avoid any contamination with iron during the mechanical preparation steps.

4.2 Hydrochloric acid, HCl ($\rho = 1,19$ g/ml)

4.3 Nitric acid, HNO₃ ($\rho = 1,40$ g/ml)

4.4 Nitric acid, (1 + 1)

Add 500 ml of nitric acid (4.3) into 500 ml of water.

4.5 Hydrofluoric acid, HF ($\rho = 1,13$ g/ml)

WARNING — Hydrofluoric acid is a hazardous substance. Care shall be taken and it shall be used under an efficient fume hood.

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