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**SVENSK STANDARD**  
**SS-EN 14940-2:2006**

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Utgåva 1

**Koppar och kopparlegeringar – Bestämning  
av kromhalt –**  
Del 2: FAAS metod

**Copper and copper alloys – Determination  
of chromium content –**  
Part 2: FAAS method

ICS 77.120.30

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EUROPEAN STANDARD

**EN 14940-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2006

ICS 77.120.30

English Version

## Copper and copper alloys - Determination of chromium content - Part 2: FAAS method

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

Kupfer und Kupferlegierungen - Bestimmung des  
Cobaltgehaltes -  
Flammenatomabsorptionsspektrometrisches Verfahren  
(FAAS)

This European Standard was approved by CEN on 15 May 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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## Foreword

This document (EN 14940-2:2006) 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of an identical text or by endorsement, at the latest by December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

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 14940-2, *Copper and copper alloys — Determination of chromium content — Part 2: FAAS method*

This is one of two parts of the standard for the determination of chromium content in copper and copper alloys. The other part is:

prEN 14940-1, *Copper and copper alloys — Determination of chromium content — Part 1: Titrimetric method*

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

## EN 14940-2:2006 (E)

### 1 Scope

This part of this European Standard specifies a flame atomic absorption spectrometric method (FAAS) for the determination of the chromium content of copper and copper alloys in the form of unwrought, wrought and cast products.

The method is applicable to products having chromium mass fractions between 0,010 % and 2,0 %.

### 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 nitric acid and digestion in sulphuric acid followed, after suitable dilution, by aspiration into an air-acetylene or into a nitrous oxide-acetylene flame of an atomic absorption spectrometer. Measurement of the absorption of the 357,9 nm line emitted by a chromium hollow-cathode lamp.

### 4 Reagents and materials

#### 4.1 General

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

**4.2 Sulphuric acid**, H<sub>2</sub>SO<sub>4</sub> ( $\rho = 1,84$  g/ml).

**4.3 Hydrogen peroxide**, H<sub>2</sub>O<sub>2</sub> 30 % (mass fraction) solution.

**4.4 Nitric acid**, HNO<sub>3</sub> ( $\rho = 1,40$  g/ml).

**4.5 Nitric acid solution**, 1 + 1

Dilute 500 ml of nitric acid (4.4) in 500 ml of water.

**4.6 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.