National Standards Authority of Ireland
Údarás um Chaighdeáin Náisiúnta na hÉireann

STANDARD RECOMMENDATION

S.R. CEN/TS 15605:2007

ICS 77.120.30

National Standards
Authority of Ireland
Glasnevin, Dublin 9
Ireland

Tel: +353 1 807 3800
Fax: +353 1 807 3838
http://www.nsai.ie

Sales
http://www.standards.ie

COPPER AND COPPER ALLOYS - INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROMETRY

This Standard Recommendation was published under the authority of the National Standards Authority of Ireland and comes into effect on: February 4, 2008

Price Code O

This page is intentionally left BLANK.

S.R. CEN/TS 15605:2007

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 15605

November 2007

ICS 77.120.30

English Version

Copper and copper alloys - Inductively coupled plasma optical emission spectrometry

Cuivre et alliages de cuivre - Analyse par spectrométrie d'émission optique avec source à plasma induit par haute fréquence

Kupfer und Kupferlegierungen - Optische Emissionsspektrometrie mit induktiv gekoppelter Plasmaanregung

This Technical Specification (CEN/TS) was approved by CEN on 21 October 2007 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of 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 United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Ref. No. CEN/TS 15605:2007: E

Contents

Page

Foreword **3**

1 Scope **4**

2 Normative references **6**

3 Principle **7**

4 Reagents and materials **7**

5 Apparatus **11**

6 Sampling **12**

7 Procedure **12**

8 Expression of results **40**

9 Precision **40**

10 Test report **44**

Annex A (informative) **Optical emission spectrometer (OES) — Suggested performance criteria to be checked** **45**

Bibliography **47**

Foreword

This document (CEN/TS 15605:2007) has been prepared by Technical Committee CEN/TC 133 “Copper and copper alloys”, the secretariat of which is held by DIN.

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 Technical Specification:

CEN/TS 15605, *Copper and copper alloys — Inductively coupled plasma optical emission spectrometry*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: 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 document specifies seven inductively coupled plasma emission spectrometry methods (A to G) for the determination of alloying elements and impurities in copper and copper alloys in the form of unwrought, wrought and cast products.

These methods are applicable to the elements listed in Tables 1 to 7 within the composition ranges shown:

Table 1 — Coppers

Element	Mass fraction %	
	min.	max.
Sn	0,02	0,60
Pb	0,02	0,60
Zn	0,02	0,60
Fe	0,01	0,60
Ni	0,01	0,60
Mn	0,01	0,60
Al	0,02	0,60
P	0,01	0,40
Be	0,01	0,60
Co	0,01	0,60
Cd	0,01	0,60

Table 2 — Copper-zinc alloys

Element	Mass fraction %	
	min.	max.
Sn	0,05	2,00
Pb	0,03	4,00
Zn	10,00	42,00
Fe	0,01	5,00
Ni	0,02	4,00
Mn	0,01	6,00
P	0,01	0,40
Al	0,02	9,00
As	0,01	0,20