EESTI STANDARD EVS-EN 27627-2:2000

Kõvasulamid. Keemiline analüüs leekaatomiabsorptsioon-spektromeetrilisel meetodil. Osa 2: Kaltsiumi-, kaaliumi-, magneesiumi- ja naatriumisisalduse määramine kontsentratsioonil 0,001-0,02% (massiprotsenti)

Hardmetals - Chemical analysis by flame atomic absorption spectrometry - Part 2: Determination of calcium, potassium, magnesium and sodium in contents from 0,001 to 0,02 % (m/m)

EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 27627-2:2000 sisaldab Euroopa standardi EN 27627-2:1993 ingliskeelset teksti.	This Estonian standard EVS-EN 27627-2:2000 consists of the English text of the European standard EN 27627-2:1993.
Standard on kinnitatud Eesti Standardikeskuse 11.01.2000 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 11.01.2000 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 77.160

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 27627-2:1993

April 1993

UDC 669.018.25:620.1:543.422

Descriptors: Powder metallurgy, hard metals, chemical analysis, determination of content, calcium, potassium, magnesium, sodium, spectrometric analysis, atomic absorption spectrophotometry

English version

Hardmetals - Chemical analysis by flame atomic absorption spectrometry - Part 2: Determination of calcium, potassium, magnesium and sodium in contents from 0,001 to 0,02 % (m/m) (ISO 7627-2:1983)

Métaux-durs - Analyse chimique par spectrométrie d'absorption atomique dans la flamme - Partie 2: Dosage du calcium, du potassium, du magnésium et du sodium à des teneurs comprises entre 0,001 et 0,02 % (m/m) (ISO 7627-2:1983)

Hartmetalle - Chemische Analyse durch Flammenatomabsorptionsspektrometrie - Teil 2: Bestimmung des Calcium-, Kalium-, Magnesium- und Natriumgehaltes von 0,001 bis 0,02 % (m/m) (ISO 7627-2:1983)

This European Standard was approved by CEN on 1993-04-02. 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.

The European Standards exist 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.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

In 1992 ISO 7627-2:1983 "Hardmetals - Chemical analysis by flame atomic absorption spectrometry - Part 2: Determination of calcium, potassium, magnesium and sodium in contents from 0,001 to 0,02 % (m/m)" was submitted to the CEN Primary Questionnaire procedure.

Following the positive result of the CEN/CS Proposal ISO 7627-2:1983 was submitted to the CEN Formal Vote. The result of the Formal Vote was positive.

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 October 1993, and conflicting national standards shall be withdrawn at the latest by October 1993.

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

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of the International Standard ISO 7627-2:1983 was approved by CEN as a European Standard without any modification.

NOTE: The European references to international publications are given in annex ZA (normative).

Annex ZA (normative)
Normative references to international publications with their relevant European publications

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).

Publication	Year	Title	EN/HD	Year
ISO 7627-1		Hardmetals - Chemical analysis by flame atomic absorption spectormetry - Part 1: General requirements	EN 27627-1	

International Standard 7627/2

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Hardmetals — Chemical analysis by flame atomic absorption spectrometry — Part 2: Determination of calcium, potassium, magnesium and sodium in contents from 0,001 to 0,02 % (*m/m*)

Métaux-durs — Analyse chimique par spectrométrie d'absorption atomique dans la flamme — Partie 2: Dosage du calcium, du potassium, du magnésium et du sodium à des teneurs comprises entre 0,001 *et* 0,02 % (*m/m*)

First edition — 1983-10-15

UDC 669.018.25 : 643.422 **Ref. No. ISO 7627/2-1983 (E)**

Descriptors: hardmetals, chemical analysis, determination of content, calcium, potassium, magnesium, sodium, atomic absorption spectrometry.

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 7627/2 was developed by Technical Committee ISO/TC 119, *Powder metallurgy*, and was circulated to the member bodies in August 1982.

It has been approved by the member bodies of the following countries:

Austria	Germany, F.R.	Spain
Brazil	Italy	Sweden
Bulgaria	Korea, Rep. of	Switzerland
China	Norway	United Kingdom
Czechoslovakia	Poland	USA
Egypt, Arab Rep. of	Romania	USSR
France	South Africa, Rep. of	

No member body expressed disapproval of the document.

Printed in Switzerland

Hardmetals — Chemical analysis by flame atomic absorption spectrometry — Part 2: Determination of calcium, potassium, magnesium and sodium in contents from 0,001 to 0,02 % (*m/m*)

1 Scope and field of application

This part of ISO 7627 specifies the method to be used for the determination of calcium, potassium, magnesium and sodium contents of hardmetals within the range 0,001 to 0,02 % (*m/m*) by flame atomic absorption spectrometry.

General requirements concerning the field of application, principle, interfering elements, apparatus, sampling and test report are given in ISO 7627/1.

NOTE — In low concentrations, the determination of these elements is very critical. Every care should be taken to avoid contamination from atmosphere and reagents.

2 Reference

ISO 7627/1, *Hardmetals — Chemical analysis by flame atomic absorption spectrometry — Part 1: General requirements.*

3 Reagents

If necessary, reagents of the highest purity shall be used.

3.1 Hydrofluoric acid, ϱ 1,12 g/ml.

3.2 Nitric acid, ϱ 1,42 g/ml.

3.3 Ammonium fluoride, 0,1 g/ml solution.

3.4 Caesium chloride, 0,01 g/ml solution.

3.5 High-purity stock solutions, for calibration purposes for each element to be determined, containing 1,000 g of the element per litre.

NOTE — This value is understood to establish a maximum limit of 1,000 5 g and a minimum limit of 0,999 5 g.

4 Procedure

4.1 Test portion

Weigh, to the nearest 0,001 g, approximately 1 g of the test sample. Transfer it to a 100 ml polytetrafluorethylene beaker or a beaker of other suitable material. Cover the beaker.

4.2 Dissolution of the test portion

Add 10 ml of water, 5 ml of the hydrofluoric acid (3.1), and then 5 ml of the nitric acid (3.2), drop by drop, to the beaker containing the test portion (4.1) and heat gently until the test portion is completely dissolved. Add 10 ml of the caesium chloride solution (3.4) and 10 ml of the ammonium fluoride solution (3.3). Then transfer the solution totally to a 100 ml polypropylene one-mark volumetric flask and dilute to the mark.

4.3 Dilution volume

Prepare the relevant dilution volume for the analysis according to the table as follows:

4.3.1 Dilution volume 100 ml: use the solution in 4.2.

4.3.2 The concentration of the solution may be reduced by a factor of 10 for instruments of higher sensitivity by transferring 10 ml of the solution in 4.2 to a 100 ml polypropylene one-mark volumetric flask. Add 10 ml of the caesium chloride solution (3.4). Add 10 ml of the ammonium fluoride solution (3.3) and dilute to the mark.

4.4 Preparation of calibration and blank solutions

4.4.1 Prepare at least six solutions according to 4.2 with a matrix composition as similar as possible to the test portion to be analysed, but without making up to volume. Then add increasing volumes of properly diluted stock solutions of the elements to be determined according to the concentration ranges to be covered. Make up to 100 ml and mix.