Spetsiaalne tehniline keraamika. Keraamiliste pulbermaterjalide katsemeetodid. Osa 5: Osakeste granulomeetrilise koostise määramine

Advanced technical ceramics - Methods of test for ceramic powders - Part 5: Determination of the particle size distribution

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 725-5:2007 sisaldab Euroopa standardi EN 725-5:2007 ingliskeelset teksti. Käesolev dokument on jõustatud 28.02.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 725-5:2007 consists of the English text of the European standard EN 725-5:2007. This document is endorsed on 28.02.2007 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This Part of EN 725 describes the preparation of suspensions and calibration of apparatus, prior to the measurement of particle size distribution of powders used for advanced technical ceramics. The preparation is appropriate for measurements either by the sedimentation method, with the detection of Xray 'absorption, or the laser light scattering method.	**Scope:** This Part of EN 725 describes the preparation of suspensions and calibration of apparatus, prior to the measurement of particle size distribution of powders used for advanced technical ceramics. The preparation is appropriate for measurements either by the sedimentation method, with the detection of Xray 'absorption, or the laser light scattering method.

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Võtmesõnad: analüüsimeetodid, difraktsioon, granulomeetriline analüüs, keraamika, kiirguskatsed, laserkiirgus, osakeste suurus, pulbermaterjalid, sadestamine

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This European Standard was approved by CEN on 2 December 2006.

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Foreword

This document (EN 725-5:2007) has been prepared by Technical Committee CEN/TC 184 “Advanced technical ceramics”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by July 2007, and conflicting national standards shall be withdrawn at the latest by July 2007.

This document supersedes EN 725-5:1996.

EN 725 *Advanced technical ceramics — Methods of test for ceramic powders* was prepared in Parts as follows:

Part 1: *Determination of impurities in alumina*

Part 2: *Determination of impurities in barium titanate*

Part 3: *Determination of the oxygen content of non-oxides by thermal extraction with a carrier gas*

Part 4: *Determination of oxygen content in aluminium nitride by XRF analysis*

Part 5: *Determination of particle size distribution*

Part 6: *Determination of the specific surface area* [withdrawn]

Part 7: *Determination of the absolute density* [withdrawn]

Part 8: *Determination of tapped bulk density*

Part 9: *Determination of un-tapped bulk density*

Part 10: *Determination of compaction properties*

Part 11: *Determination of densification on natural sintering*

Part 12: *Chemical analysis of zirconia*

Parts 6 and 7 of the series were superseded in 2005 by EN ISO 18757 and EN ISO 18753 respectively.

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 United Kingdom.

1 Scope

This Part of EN 725 describes the preparation of suspensions and calibration of apparatus, prior to the measurement of particle size distribution of powders used for advanced technical ceramics.

The preparation described is appropriate for measurements either by the sedimentation method or the laser light scattering method.

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.

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

3 Apparatus

3.1 ***Glass microscope slides and cover slips***.

3.2 ***Optical microscope***.

3.3 ***Beaker,*** 50 ml to 100 ml.

3.4 ***Ultrasonicator***.

3.5 ***Magnetic stirrer***.

3.6 ***Particle size analyser***.

4 Preparation of the suspension

4.1 Selection of liquid

The dispersing liquid for the suspension shall not react with or dissolve the powder.

For the sedimentation method of analysis, the density of the liquid shall be less than that of the powder by at least 0,5 g/cm³.

For the laser light scattering method of analysis, the liquid shall be optically transparent for the wavelength used.

NOTE 1 This is generally 633 nm.

The liquid shall have a refractive index which is substantially different from that of the sample.

NOTE 2 Any specific manufacturer's instructions regarding the refractive index of the dispersing liquid should be taken into account.