

**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

<p>Käesolev Eesti standard EVS-EN 725-5:2000 sisaldab Euroopa standardi EN 725-5:1996 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 725-5:2000 consists of the English text of the European standard EN 725-5:1996.</p> <p>This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: See standardi EN 725 osa kirjeldab spetsiaalse tehnilise keraamika jaoks vajalike pulbermaterjalide granulomeetrilise koostise määramiseks vajalike suspensioonide valmistamist ja aparatuuri kalibreerimist.</p>	<p>Scope:</p>
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Võtmesõnad: analüüsimeetodid, difraktsioon, granulomeetriline analüüs, keraamika, kiirguskatsed, laserkiirgus, osakeste suurus, pulbermaterjalid, sadestamine

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Descriptors: Ceramics, powder, testing, particle size distribution.

English version

Advanced technical ceramics

Methods of test for ceramic powders

Part 5: Determination of the particle size distribution

Céramiques techniques avancées;
méthodes d'essai pour poudres céra-
miques. Partie 5: Détermination de la
distribution granulométrique

Hochleistungskeramik; Prüfverfahren für
keramische Pulver. Teil 5: Bestimmung
der Teilchengrößenverteilung

This European Standard was approved by CEN on 1995-10-30.

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.

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

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 184 'Advanced technical ceramics', the Secretariat of which is held by BSI.

EN 725 'Advanced technical ceramics; methods of test for ceramic powders' consists of 11 Parts:

- Part 1: Determination of impurities in alumina
- Part 2: Determination of impurities in barium titanate (ENV)
- Part 3: Determination of oxygen content of non-oxides by thermal extraction with a carrier gas
- Part 4: Determination of oxygen content of aluminium nitride by XRF (ENV)
- Part 5: Determination of the particle size distribution
- Part 6: Determination of the specific surface area
- Part 7: Determination of absolute density
- Part 8: Determination of tapped density
- Part 9: Determination of untamped density
- Part 10: Determination of compaction properties
- Part 11: Determination of densification on natural sintering (ENV)

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by July 1996 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, 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.

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 is appropriate for measurements either by the sedimentation method, with the detection of X-ray absorption, or the laser light scattering method.

2 Preparation of the suspension

2.1 Selection of liquid

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

For the sedimentation method, the density of the liquid shall be less than that of the powder by at least $0,5 \text{ g/cm}^3$.

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

NOTE : This is generally 633 nm.

The liquid shall have a refractive index which is substantially different from that of the sample. Any specific manufacturer's instructions shall be considered.

The liquid for the suspension shall be selected, together with any dispersing agent, from those given in annex A.

NOTE : Additional information is given in the references listed in annex B.

The dispersion of powder in the liquid shall be checked by one of the methods given in 2.2.

2.2 Dispersion checking

2.2.1 Optical microscopic examination

A drop of the prepared suspension is placed on the glass slide of a microscope and is then carefully covered with a cover slip. The observation of the preparation with a suitable magnification allows one to determine if particles are completely separated and well dispersed, or, if they are gathered together in chains or clusters.

NOTE : This method is not suitable for powders with particle diameters $< 5 \mu\text{m}$.