International Standard

ISO 19613

Fine ceramics (advanced ceramics, advanced technical ceramics) — Measurement of viscosity of ceramic slurry by use of a rotational viscometer

Céramiques techniques — Mesure de la viscosité des céramiques en suspension au moyen d'un viscosimètre rotatif

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Foreword

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This document was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

This second edition cancels and replaces the first edition (ISO 19613:2018), which has been technically revised.

The main changes are as follows:

— clarification added to the scope;

— paragraph addition in the Apparatus section on the use of different geometries;

— paragraph addition in the Measurement condition on the choice of the shear rate range;

— reorganisation of the Pretreatment of the sample section;

— rewriting the Measurement procedure section to include the identification of the fluid behaviour.

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Measurement of viscosity of ceramic slurry by use of a rotational viscometer

1 Scope

This document specifies a method for measurement of the viscosity of a ceramic slurry using a rotational viscometer. The method only involves rotations with a monotonic angle variation. This document does not apply to measurements using an oscillating rotation.

Ceramic slurry is used in ceramic processes such as dip coating, spray coating, screen printing, slip casting, tape casting, spray drying and polishing. This document does not apply to dispersion of fillers in molten thermoplastic polymers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 20507, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20507 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
shear stress
stress acting on planes parallel to the direction of flow when the fluid is subject to laminar flow

Note 1 to entry: The SI units are Pascal (Pa).

3.2
shear rate
gradient of laminar flow rate perpendicular to the fluid flow

Note 1 to entry: The SI units are s^{-1}.

3.3
viscosity
ratio of *shear stress* (3.1) to *shear rate* (3.2)

Note 1 to entry: This ratio is representative of the internal resistance of the fluid to flow.

Note 2 to entry: The SI unit of viscosity is Pa × s.

Note 3 to entry: mPa × s = 1 cP in terms of c.g.s. units [where 1P = 1 g/(cm × s)].

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