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Rheological test methods — Fundamentals and interlaboratory comparisons —

Part 2: Determination of the time-dependent structural change (thixotropy)

Méthodes d'essai rhéologiques — Principes fondamentaux et comparaisons interlaboratoires —

Partie 2: Détermination de la variation structurelle dans le temps (thixotropie)

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Foreword

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Rheological test methods — Fundamentals and interlaboratory comparisons —

Part 2: Determination of the time-dependent structural change (thixotropy)

1 Scope

This document gives information on an interlaboratory comparison for the determination of the time-dependent structural change (thixotropy) using rheological test methods. Thixotropy is the reversible, time-dependent decrease of shear viscosity η at a constant shear rate $\dot{\gamma}$ or shear stress τ.

This document provides examples of fields of application, in which important material properties can be characterized by the thixotropy. These fields of application include:

— effectiveness of rheological additives and thixotropic agents, respectively;

— stability of the structure at rest (e.g. behaviour when starting to pump);

— wet film thickness after processing;

— levelling and sagging behaviour (e.g. without brushmarks or sag formation);

— orientation of effect pigments.

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 3219-1, *Rheology — Part 1: Vocabulary and symbols for rotational and oscillatory rheometry*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3219-1 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/

4 Measuring technique for the determination of thixotropy

4.1 Conditions for the measuring technique

Clause 4 briefly describes methods that are currently in use. In principle, the thixotropy depends on the temperature, the pressure, and the thermal and mechanical history of the material. A detailed specification of the measuring profile is therefore a precondition for reproducible measurements and comparable

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