Irish Standard
I.S. EN ISO 19403-3:2020

Paints and varnishes - Wettability - Part 3: Determination of the surface tension of liquids using the pendant drop method (ISO 19403-3:2017)

I.S. EN ISO 19403-3:2020

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National Foreword

I.S. EN ISO 19403-3:2020 is the adopted Irish version of the European Document EN ISO 19403-3:2020, Paints and varnishes - Wettability - Part 3: Determination of the surface tension of liquids using the pendant drop method (ISO 19403-3:2017)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 19403-3

February 2020

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English Version

Paints and varnishes - Wettability - Part 3: Determination of the surface tension of liquids using the pendant drop method (ISO 19403-3:2017)

Peintures et vernis - Mouillabilité - Partie 3: Détermination de la tension superficielle des liquides par la méthode de la goutte pendante (ISO 19403-3:2017)

Beschichtungsstoffe - Benetzbarkeit - Teil 3: Bestimmung der Oberflächenspannung von Flüssigkeiten mit der Methode des hängenden Tropfens (ISO 19403-3:2017)

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European foreword

The text of ISO 19403-3:2017 has been prepared by Technical Committee ISO/TC 35 "Paints and varnishes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 19403-3:2020 by Technical Committee CEN/TC 139 "Paints and varnishes" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by August 2020, and conflicting national standards shall be withdrawn at the latest by August 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 19403-3:2017 has been approved by CEN as EN ISO 19403-3:2020 without any modification.

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INTERNATIONAL STANDARD

ISO 19403-3

First edition
2017-06

Paints and varnishes — Wettability —

Part 3: Determination of the surface tension of liquids using the pendant drop method

Peintures et vernis — Mouillabilité —

Partie 3: Détermination de la tension superficielle des liquides par la méthode de la goutte pendante

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

A list of all parts in the ISO 19403 series can be found on the ISO website.

Paints and varnishes — Wettability —

Part 3: Determination of the surface tension of liquids using the pendant drop method

1 Scope

This document specifies a test method to measure the surface tension of liquids with an optical method using the pendant drop. The method can be applied for the characterization of liquid coating materials. The applicability can be restricted for liquids with non-Newtonian rheology[1)].

NOTE For other methods to determine the surface tension, see e.g. EN 14370 and ISO 1409.

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 2811 (all parts), *Paints and varnishes — Determination of density*

ISO 4618, *Paints and varnishes — Terms and definitions*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

ISO 19403-1, *Paints and varnishes — Wettability — Part 1: Terminology and general principles*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618 and ISO 19403-1 apply.

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

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

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

4 Principle

One drop of the respective liquids to be tested is captured hanging from a needle, where the drop shall deviate significantly from the spherical shape due to its own mass. The surface tension is calculated from the shape of the pendant drop in accordance with the Young-Laplace equation.

The polar and disperse fractions of the surface tension can be determined with at least two methods, which are specified in ISO 19403-4 and ISO 19403-5.

5 Apparatus and materials

Ordinary laboratory apparatus, together with the following.

1) This term is defined in DIN 1342-1.