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Footwear — Critical substances potentially present in footwear and footwear components —

Part 1: Determination of phthalate with solvent extraction

Chaussures — Substances critiques potentiellement présentes dans les chaussures et les composants des chaussures —

Partie 1: Détermination des phtalates par extraction au solvant

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Foreword

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This document was prepared by Technical Committee ISO/TC 216, *Footwear*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 309, *Footwear,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition of ISO 16181-1, together with ISO 16181-2, cancels and replaces ISO/TS 16181:2011, which has been technically revised.

The main changes compared to the previous edition are as follows:

— addition of number of phthalates from 7 to 26;

— addition of new Clause 2 and Clause 3, and renumbering of subsequent clauses;

— replacement of “n-hexane/acetone” with “toluene” and alternative “tetrahydrofuran” as extraction solution;

— splitting of former Clause 3 into Clauses 5 and 6, with technical modification;

— technical revision of Clauses 4 and 5;

— deletion of 5.2.4;

— addition of Clause 9;

— addition of Annex D.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Footwear — Critical substances potentially present in footwear and footwear components —

Part 1: Determination of phthalate with solvent extraction

WARNING — The use of this document can involve hazardous materials, operations and equipment. It does not purport to address all of the safety or environmental problems associated with its use. It is the responsibility of users of this document to take appropriate measures to ensure the safety and health of personnel and the environment prior to application of the document, and to determine the applicability of regulatory limitations for this purpose.

1 Scope

This document specifies a test method to determine the qualitative and quantitative presence of phthalate compounds (see Annex A) in footwear and footwear components.

NOTE 1 A list of relevant materials potentially containing phthalates can be found in ISO/TR 16178:2012, Annex A or in CEN/TR 16417.

NOTE 2 This test method can also be used to determine phthalates other than those listed in Annex A, subject to validation.

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 4787:2010, *Laboratory glassware — Volumetric instruments — Methods for testing of capacity and for use*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

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

4 Principle

The test sample is extracted using toluene at 60 °C in an ultrasonic bath for 1 h. An aliquot is then analysed using a gas chromatograph (GC) with a mass selective detector (MS).

All the abbreviations of phthalates used are given in Annex A.

When compared with ISO 16181-2, the two analytical methods should give similar trends but not necessarily the same absolute result. Therefore, in cases of dispute, the method in this document shall be used in preference to ISO 16181-2.

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