SLOVENSKI STANDARD
SIST EN ISO 16181-2:2021

01-september-2021

Nadomešča:

SIST-TS CEN ISO/TS 16181:2011

Obutev - Kritične snovi, ki so lahko v obutvi in sestavnih delih obutve - 2. del: Ugotavljanje ftalatov brez ekstrakcije s topilom (ISO 16181-2:2021)

Footwear - Critical substances potentially present in footwear and footwear components - Part 2: Determination of phthalate without solvent extraction (ISO 16181-2:2021)

Schuhe - Möglicherweise in Schuhen und Schuhbestandteilen vorhandene kritische Substanzen - Teil 2: Bestimmung von Phthalaten ohne Lösemittelextraktion (ISO 16181-2:2021)

Chaussures - Substances critiques potentiellement présentes dans les chaussures et les composants des chaussures - Partie 2: Détermination des phtalates sans extraction par solvant (ISO 16181-2:2021)

Ta slovenski standard je istoveten z: **EN ISO 16181-2:2021**

ICS:

61.060	Obuvala	Footwear

SIST EN ISO 16181-2:2021 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 16181-2

July 2021

ICS 61.060

Supersedes CEN ISO/TS 16181:2011

English Version

Footwear - Critical substances potentially present in footwear and footwear components - Part 2: Determination of phthalate without solvent extraction (ISO 16181-2:2021)

Chaussures - Substances critiques potentiellement présentes dans les chaussures et les composants des chaussures - Partie 2: Détermination des phtalates sans extraction par solvant (ISO 16181-2:2021)

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This European Standard was approved by CEN on 22 May 2021.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 16181-2:2021) has been prepared by Technical Committee ISO/TC 216 "Footwear" in collaboration with Technical Committee CEN/TC 309 “Footwear” the secretariat of which is held by UNE.

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 January 2022, and conflicting national standards shall be withdrawn at the latest by January 2022.

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.

This document supersedes CEN ISO/TS 16181:2011.

Any feedback and questions on this document should be directed to the users’ national standards body/national committee. A complete listing of these bodies can be found on the CEN websites.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 16181-2:2021 has been approved by CEN as EN ISO 16181-2:2021 without any modification.

INTERNATIONAL STANDARD

ISO 16181-2

First edition
2021-06

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

Part 2: Determination of phthalate without solvent extraction

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

Partie 2: Détermination des phtalates sans extraction par solvant

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

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

— phthalates were added to the list in Table A.1 (from 7 onwards);

— this document introduces a new technique.

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.

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

Part 2: Determination of phthalate without 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 method for the determination of the content of specific phthalates (see Annex A) by pyrolyzer/thermal desorption gas chromatography-mass spectrometry (Py/TD-GC-MS). This document is applicable to all types of footwear materials except textiles.

NOTE See also CEN/TR 16417 for a list of the specific phthalates to which this document applies.

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 16181-1, *Footwear — Critical substances potentially present in footwear and footwear components — Part 1: Determination of phthalate with solvent extraction*

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 sample is directly introduced into a pyrolyzer, the phthalates are thermally extracted under a specific heat zone and then transferred to the gas chromatograph. Phthalate compounds are separated by the gas chromatographic capillary column and detected by a mass spectrometer.

When compared to ISO 16181-1, the two analytical methods should present similar trends but at the same time, not necessarily the same absolute result. Therefore, in case of any dispute, ISO 16181-1 shall be used in preference.

5 Apparatus

5.1 Analytical balance, capable of measuring accurately to 0,000 01 g (0,01 mg).

5.2 Cryogenic grinding/milling mill with liquid N_2 cooling.

5.3 Nipper (a hand tool for cutting samples).

5.4 Micro spatula.

5.5 Tweezers.

5.6 Cutter.

5.7 File.

5.8 Micro puncher.

5.9 Deactivated glass wool.

5.10 Micro syringes or automated pipettes.

5.11 Sample cup.

5.12 Volumetric flasks, 10 ml and 100 ml.

5.13 Gas chromatograph – mass spectrometer equipped with a pyrolyzer.

— Pyrolyzer/thermal desorption accessory:

A temperature rise of 1 °C to 100 °C per minute should be possible across a temperature range from 40 °C to 500 °C. The sample cup should be treated for chemical stability and should be capable of accommodating both liquid and solid samples. It should be possible to maintain the interface between the thermal pyrolysis unit and the gas chromatograph inlet up to 400 °C.

6 Reagents and materials

All reagent chemicals shall be tested for contamination and blank values prior to application as follows.

6.1 n-hexane, for preparing the phthalates standard solution, GC grade or higher.

6.2 Phthalates, see Table A.1.

6.3 Helium, purity greater than a volume fraction of 99,999 %.

6.4 Calibrants: prepare stock solutions containing 100 mg/l of each phthalate (see Annex A) in n-hexane (6.1).

NOTE A commercially available Certified Reference Materials (CRM) containing specific phthalates could be used as a calibrant.