



NSAI
Standards

Irish Standard
I.S. EN 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)

I.S. EN ISO 16181-2:2021

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This document is based on:

EN ISO 16181-2:2021

Published:

2021-07-07

This document was published under the authority of the NSAI and comes into effect on:

2021-07-28

ICS number:

61.060

NOTE: If blank see CEN/CENELEC cover page

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National Foreword

I.S. EN ISO 16181-2:2021 is the adopted Irish version of the European Document EN 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)

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EUROPEAN STANDARD

EN ISO 16181-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

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)

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

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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EN ISO 16181-2:2021 (E)

Contents	Page
European foreword.....	3

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.

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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



Reference number
ISO 16181-2:2021(E)

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Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Apparatus	2
6 Reagents and materials	2
7 Sampling	3
8 Test procedure	3
8.1 Test sample preparation.....	3
8.2 Calibration.....	3
8.3 Chromatographic analysis.....	4
8.3.1 The chromatography parameters for gas chromatograph – mass spectrometer equipped with a pyrolyzer.....	4
8.3.2 Qualitative and quantitative analysis by gas chromatograph – mass spectrometer equipped with a pyrolyzer.....	4
9 Calculation of phthalate compounds in the sample	4
9.1 Calculation of the phthalate compounds in the sample.....	4
9.2 Performance of the test method.....	5
10 Detection limit	5
11 Test report	5
Annex A (informative) List of phthalates specified in CEN/TR 16417	6
Annex B (informative) Sampling guidelines	9
Annex C (informative) Chromatography parameters for gas chromatography mass spectrometry equipped with a pyrolyzer	12
Annex D (informative) Verification of the evolved gas analysis (EGA) thermal desorption zone	14
Annex E (informative) Examples of chromatogram for phthalate by Py/TD-GC-MS	16
Annex F (informative) Comparative test results of ISO 16181-1 and this document (i.e. ISO 16181-2)	18
Bibliography	22

ISO 16181-2:2021(E)

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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.

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