TECHNICAL SPECIFICATION

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CEN ISO/TS 16190

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English Version

Footwear - Critical substances potentially present in footwear and footwear components - Test method to quantitatively determine polycyclic aromatic hydrocarbons (PAH) in footwear materials (ISO/TS 16190:2013)

Chaussures - Substances critiques potentiellement présentes dans la chaussure et les composants de chaussure - Méthodes d'essai pour déterminer quantitativement les hydrocarbures aromatiques polycycliques (HAP) dans les matériaux de chaussure (ISO/TS 16190:2013)

Schuhe - Möglicherweise in Schuhen und Schuhbestandteilen vorhandene kritische Substanzen - Prüfverfahren zur quantitativen Bestimmung von PAK in Schuhwerkstoffen (ISO/TS 16190:2013)

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Foreword

This document (CEN ISO/TS 16190:2013) has been prepared by Technical Committee CEN/TC 309 “Footwear", the secretariat of which is held by AENOR, in collaboration with Technical Committee ISO/TC 216 "Footwear".

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Endorsement notice

The text of ISO/TS 16190:2013 has been approved by CEN as CEN ISO/TS 16190:2013 without any modification.

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Footwear — Critical substances potentially present in footwear and footwear components — Test method to quantitatively determine polycyclic aromatic hydrocarbons (PAH) in footwear materials

CAUTION — The use of polycyclic aromatic hydrocarbons (PAH) can be hazardous.

1 Scope

This Technical Specification specifies a method to determine the amounts of polycyclic aromatic hydrocarbons (PAH) in footwear and footwear components.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/TR 16178:2012, *Footwear — Critical substances potentially present in footwear and footwear components*

ISO 17993:2002, *Water quality — Determination of 15 polycyclic aromatic hydrocarbons (PAH) in water by HPLC with fluorescence detection after liquid-liquid extraction*

ISO 28540:2011, *Water quality — Determination of 16 polycyclic aromatic hydrocarbons (PAH) in water — Method using gas chromatography with mass spectrometric detection (GC-MS)*

3 Principle

The test sample is extracted using n-hexane at 60 °C in an ultrasonic bath for 1 h. An aliquot is then analysed using chromatographic techniques.

See ISO/TR 16178:2012, Table 1, which defines which materials are concerned by this determination.

4 Chemicals

All chemicals shall be analytical grade.

4.1 n-Hexane, CAS[1)] number: 110-54-3.

4.2 Certificated PAH stock solution, with 18 different components specified in 6.4 to each 100 µg/ml.

NOTE Commercial solutions are available on the market.

4.3 Internal standards:

— Naphthalene-d8, CAS number: 1146-65-2

— Pyrene-d10, CAS number: 1718-52-1

— Perylene-d12, CAS number: 1520-96-3

— Anthracene-d10 CAS number: 1719-06-8

1) CAS: Chemical Abstract Service.