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

*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*



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Foreword

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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, CAS¹⁾ 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.