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**Textiles — Method for determination  
of alkylphenols (AP)**

*Textiles — Méthode de détermination de la teneur en alkylphénols (AP)*

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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](http://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](http://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 on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 38, *Textiles*.

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](http://www.iso.org/members.html).

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# Textiles — Method for determination of alkylphenols (AP)

**WARNING** — This document calls for the use of substances/procedures that may be injurious to the health/environment if appropriate conditions are not observed. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety/environment at any stage.

## 1 Scope

This document specifies the method for the determination of extractable alkylphenols (AP) without derivatization step in textile and textile products.

## 2 Normative references

There are no normative references in this document.

## 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 specimen is cut into small pieces, transferred to a sample vial and treated with methanol in ultrasonic water bath. The extract is filtered and collected. Subsequently, the collected extract is analysed by gas chromatograph with mass selective detector (GC-MS), liquid chromatograph with mass selective detector (LC-MS) or liquid chromatograph with fluorescence detector (LC-FLD).

## 5 Reagents

Unless otherwise specified, analytical grade chemicals shall be used.

**5.1 4-n-Octylphenol**, CAS No.1806-26-4.

**5.2 4-tert-Octylphenol**, CAS No.140-66-9.

**5.3 4-n-Nonylphenol**, CAS No.104-40-5.

**5.4 4-Nonylphenol**, CAS No. 84852-15-3.

**5.5 Methanol**, (HPLC grade).

**5.6 Acetone**.

**5.7 Acetonitrile**, (HPLC grade).

5.8 Water, (HPLC grade).

## 6 Apparatus

### 6.1 General

Clean all glassware by rinsing with acetone (5.6) prior to use.

### 6.2 Apparatus and auxiliaries for preparing the sample

6.2.1 Standard laboratory equipment and the following.

6.2.2 Analytical balance with resolution of 0,01 g (for test specimen preparation).

6.2.3 Analytical balance with resolution of 0,001 g (for standard preparation).

6.2.4 Glass vial with screw cap (e.g. 40 ml).

6.2.5 Ultrasonic water bath [to be set up at  $(70 \pm 5)$  °C].

6.2.6 Disposable syringe and membrane filter (with pore size of 0,45 µm or less).

6.2.7 Glass vial with septum cap (for chromatographic instrument).

### 6.3 Chromatographic equipment

6.3.1 Gas chromatograph with mass selective detector (GC-MS), or

6.3.2 Liquid chromatograph with mass selective detector (LC-MS), or

6.3.3 Liquid chromatograph with fluorescence detector (LC-FLD).

6.3.4 Capillary column for gas chromatograph, (5 %-phenyl)-methylpolysiloxane phase, non-polar, bonded and cross-linked, low bleed.

6.3.5 C18 reverse phase column for liquid chromatograph.

## 7 Procedure

### 7.1 Standard preparation

Octylphenols and nonylphenols are weighed accurately with analytical balance (6.2.3) and dissolved with methanol (5.5) containing 1 000 mg/l for stock solution. The stock solution can be preserved in the dark at less than 4°C.

### 7.2 Sample preparation

The test specimen is cut into pieces with 5 mm × 5 mm and pieces are mixed homogeneously. The specimen is weighed 1 g to the nearest 0,01 g with analytical balance (6.2.2) and put into the 40 ml glass vial (6.2.4) for extraction.