

Textiles and textile products - Determination of biocide additives - Part 2: Chlorophenol-based preservatives, method using gas chromatography

EESTI STANDARDI EESSÕNA

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English Version

**Textiles and textile products - Determination of biocide
additives - Part 2: Chlorophenol-based preservatives,
method using gas chromatography**

Textiles et produits textiles - Détermination des
additifs biocides - Partie 2 : Conservateurs à base de
chlorophénol, méthode par chromatographie en phase
gazeuse

Textilien und textile Erzeugnisse - Bestimmung von
Biozid-Zusatzstoffen - Teil 2: Konservierungsmittel auf
Chlorphenolbasis, Verfahren mittels
Gaschromatographie

This European Standard was approved by CEN on 12 June 2023.

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European foreword

This document (EN 17134-2:2023) has been prepared by Technical Committee CEN/TC 248 “Textiles and textile products”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by January 2024, and conflicting national standards shall be withdrawn at the latest by January 2024.

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 EN 17134:2019.

This document is part of a series of documents:

EN 17134-1¹, *Textiles and textile products — Determination of biocide additives — Part 1: 2-Phenylphenol and triclosan, method using liquid chromatography*

EN 17134-2, *Textiles and textile products — Determination of biocide additives — Part 2: Chlorophenol-based preservatives, method using gas chromatography*

EN 17134-3², *Textiles and textile products — Determination of biocide additives — Part 3: Permethrin, method using liquid chromatography*

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¹ Under preparation. Stage at the time of publication: prEN 17134-1:2023.

² Under preparation. Stage at the time of publication: prEN 17134-3:2023.

Introduction

In Europe, according to Regulation (EU) 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants [1] pentachlorophenol (PCP) and its salts and esters as constituents of articles are prohibited. According to Commission Delegated Regulation (EU) 2021/277 of 16 December 2020 amending Annex I to Regulation (EU) 2019/1021 of the European Parliament and of the Council on persistent organic pollutants as regards pentachlorophenol and its salts and esters [2], articles containing PCP in concentrations equal or lower than 5 mg/kg are allowed.

Further chlorinated phenols are restricted by voluntary specifications (ecolabel criteria, industry initiatives and standards).

WARNING — The use of this document involves hazardous materials. 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 fulfil statutory and regulatory requirements for this purpose.

1 Scope

This document specifies a test method using gas chromatography with a mass selective detector (GC-MS) for detection and quantification of chlorophenols (CPs), which are either freely present or released from salts and esters: pentachlorophenol (PCP), tetrachlorophenol- (TeCP), trichlorophenol- (TriCP), dichlorophenol- (DiCP) and monochlorophenol- (MoCP) isomers. The method is applicable to textile fibres, yarns, fabrics, coated fabrics, printed fabrics, plastic, and wooden parts of textile products (for example buttons).

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.

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696)*

EN ISO 4787, *Laboratory glass and plastic ware - Volumetric instruments - Methods for testing of capacity and for use (ISO 4787)*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Principle

The sample is cut into small pieces and extracted with potassium hydroxide (KOH) solution at a defined temperature. The extracted CPs are subsequently acetylated and the chlorinated acetates are analysed and quantified using GC-MS. The quantitative determination is made by corrections with ¹³C- and ²H-labelled internal standards.

5 Reagents

Unless otherwise specified, all reagents shall be of a recognized analytical grade.

5.1 Water, grade 3, according to EN ISO 3696.

5.2 Potassium hydroxide (KOH), CAS Registry Number³ (CAS RN[®]) 1310-58-3.

5.3 Potassium carbonate (K₂CO₃), anhydrous, CAS RN[®] 584-08-7.

5.4 n-Hexane, CAS RN[®] 110-54-3.

³ CAS Registry Number[®] (CAS RN[®]) is a trademark of the American Chemical Society (ACS). This information is given for the convenience of users of this document and does not constitute an endorsement by CEN of the product named. Equivalent products may be used if they can be shown to lead to the same results.