

**Textiles - Determination of the phthalate content -  
Tetrahydrofuran method (ISO 14389:2014)**

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## EESTI STANDARDI EESSÕNA

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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.06.2014.	Date of Availability of the European standard is 04.06.2014.
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ICS 59.060.01

English Version

## Textiles - Determination of the phthalate content - Tetrahydrofuran method (ISO 14389:2014)

Textiles - Détermination de la teneur en phtalates -  
Méthode au tétrahydrofurane (ISO 14389:2014)

Textilien - Bestimmung des Phthalatanteils -  
Tetrahydrofuran-Verfahren (ISO 14389:2014)

This European Standard was approved by CEN on 20 June 2014.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Foreword

This document (EN ISO 14389:2014) has been prepared by Technical Committee ISO/TC 38 "Textiles" in collaboration with 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of an identical text or by endorsement, at the latest by December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

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### Endorsement notice

The text of ISO 14389:2014 has been approved by CEN as EN ISO 14389:2014 without any modification.

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## Introduction

This International Standard covers a test method for the determination of some phthalates in textile articles.

Phthalates are commonly used as plasticizers in polymers. Phthalates are an issue for textile manufacturers and retailers due to their use within motifs, coated fabrics, plastisol prints, buttons, etc.

Phthalates are controversial because high doses of many phthalates have shown hormonal activity in rodent studies. Studies on rodents involving large amounts of phthalates have shown damage to the liver, the kidneys, the lungs, and the developing testes.

Due to their potential effect as endocrine disruptors, some of the listed phthalates are toxic in reproduction. The listed phthalates are based on those which have been restricted in some regulations (e.g. in the European Union).

# Textiles — Determination of the phthalate content — Tetrahydrofuran method

**WARNING** — This International Standard calls for the use of substances and/or procedures that might be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage. It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced operators.

## 1 Scope

This International Standard specifies a method of determining phthalates in textiles with gas chromatography–mass spectrometry (GC-MS) with mass selective detector.

This International Standard is applicable to textile products where there is a risk of the presence of some phthalates.

## 2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 2.1

#### **plasticized or softened material**

plastic material that is treated with chemicals to make it more flexible

Note 1 to entry: For this specific International Standard, the chemicals are phthalates.

EXAMPLE Examples of plastic material: coating, pigment print binder, etc.

### 2.2

#### **overall treated textile**

textile with a continuous finish, coating or print

### 2.3

#### **locally treated textile**

textile with a discontinuous finish, coating or print

### 2.4

#### **representative specimen**

specimen obtained by mixing pieces of all the different treated parts and colours

## 3 Principle

The phthalates are extracted from textile specimen by ultrasonic generator with tetrahydrofuran. As the plastic polymer is partially or completely dissolved, the phthalate extraction is followed by the precipitation of the dissolved polymer using the appropriate solvent (acetonitrile, *n*-hexane, etc.). After centrifugation and dilution of the extract to volume, gas chromatography–mass spectrometry (GC-MS) is used to identify individual phthalates in the specimen and quantify them by using an internal standard (IS).

## 4 Reagents

Unless otherwise specified, use only reagents of recognized analytical grade.