Textiles - Determination of metal content - Part 1: Determination of metals using microwave digestion

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 16711-1:2015 sisaldab Euroopa standardi EN 16711-1:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 16711-1:2015 consists of the English text of the European standard EN 16711-1:2015.
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 04.11.2015.	Date of Availability of the European standard is 04.11.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 59.060.01

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16711-1

November 2015

ICS 59.060.01

English Version

Textiles - Determination of metal content - Part 1: Determination of metals using microwave digestion

Textiles - Détermination de la teneur en métaux - Partie 1: Dosage des métaux par minéralisation par micro-ondes

Textilien - Bestimmung von Metallen - Teil 1: Bestimmung von Metallen mittels Mikrowellenaufschluss

This European Standard was approved by CEN on 5 September 2015.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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Ref. No. EN 16711-1:2015 E

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European foreword

This document (EN 16711-1:2015) 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 May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

EN 16711, *Textiles — Determination of metal content* is composed of the following parts:

— *Part 1: Determination of metals using microwave digestion*;

— *Part 2: Determination of metals extracted by acidic artificial perspiration solution.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies a procedure for determination of metals, in particular antimony (Sb), arsenic (As), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni) in natural and man-made textiles, including coated fabrics and garment components (e.g. buttons, zips, etc.) after microwave digestion.

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.

EN 1233, *Water quality — Determination of chromium — Atomic absorption spectrometric methods*

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

EN ISO 11885, *Water quality — Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (ISO 11885)*

EN ISO 12846, *Water quality — Determination of mercury — Method using atomic absorption spectrometry (AAS) with and without enrichment (ISO 12846)*

EN ISO 15586, *Water quality — Determination of trace elements using atomic absorption spectrometry with graphite furnace (ISO 15586)*

EN ISO 17294-2, *Water quality — Application of inductively coupled plasma mass spectrometry (ICP-MS) — Part 2: Determination of 62 elements (ISO 17294-2)*

EN ISO 17852, *Water quality — Determination of mercury — Method using atomic fluorescence spectrometry (ISO 17852)*

ISO 8288, *Water quality — Determination of cobalt, nickel, copper, zinc, cadmium and lead — Flame atomic absorption spectrometric methods*

3 Principle

The total metal content is determined after microwave digestion.

Analysis is performed with appropriate analytical techniques of atomic absorption, inductively coupled plasma and mass spectrometry (e.g. ICP-MS, ICP-OES, AAS, cold vapor atomic absorption spectrometry, etc.).

4 Apparatus

General laboratory equipment for analytical chemistry. In addition, the following is required:

4.1 Analytical balance, readability 0,000 1 g.

4.2 Microwave digestion system with appropriate high pressure vessels.

4.3 Appropriate digestion vessels, e.g. of polytetrafluoroethylene (PTFE).