

Paper and board - Paper and board intended to come into contact with foodstuffs - Determination of cadmium, chromium and lead in an aqueous extract

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 12498:2018 sisaldab Euroopa standardi EN 12498:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 12498:2018 consists of the English text of the European standard EN 12498:2018.
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 21.11.2018.	Date of Availability of the European standard is 21.11.2018.
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English Version

Paper and board - Paper and board intended to come into contact with foodstuffs - Determination of cadmium, chromium and lead in an aqueous extract

Papier et carton - Papiers et cartons destinés à entrer en contact avec les denrées alimentaires - Détermination du cadmium, du chrome et du plomb dans un extrait aqueux

Papier und Pappe - Papier und Pappe für den Kontakt mit Lebensmitteln - Bestimmung von Cadmium, Chrom und Blei in einem wässrigen Extrakt

This European Standard was approved by CEN on 15 July 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (EN 12498:2018) has been prepared by Technical Committee CEN/TC 172 "Pulp, paper and board", the secretariat of which is held by DIN.

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 2019, and conflicting national standards shall be withdrawn at the latest by May 2019.

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 12498:2005.

With regards to EN 12498:2005 the following changes have been made:

- a) Chromium has been added to the scope;
- b) The reagents have been modified;
- c) Editorial updating.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This document is one in a series of Standards for the determination of heavy metals in an aqueous extract of paper or board intended for contact with food. This document specifies the test method for the determination of cadmium, lead and chromium in an aqueous extract.

It is applicable to paper and paperboard with extractable metal contents exceeding

- 0,1 mg per kg for cadmium,
- 0,6 mg per kg for lead,
- 0,25 mg per kg for chromium.

Metal content levels below those given can be measured by this document if very sensitive equipment is available and if all other laboratory conditions fulfil the requirements for trace element analysis.

## 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 645, *Paper and board intended to come into contact with foodstuffs — Preparation of a cold water extract*

EN 647, *Paper and board intended to come into contact with foodstuffs — Preparation of a hot water extract*

## 3 Principle

An aliquot portion from the stabilized cold water (see EN 645) or stabilized hot water extract (see EN 647) (see Clause 6) is analysed by atomic absorption spectrometry using a graphite tube furnace.

NOTE ICP (inductive coupled plasma) can be used, if validated.

## 4 Reagents

All reagents and the water used shall be suitable for trace element analysis. Store the solutions in high density polyethylene/polypropylene bottles.

**4.1 Nitric acid (HNO<sub>3</sub>)**, 65 % (d = 1,42)

**4.1.1 Nitric acid (4.1)**, diluted 1: 1 (V/V) with water

**4.1.2 Nitric acid (4.1)**, diluted to 1 % (V/V) with water

**4.2 Hydrochloric acid (HCl)**, 36 % (d = 1,19)

**4.3 Hydrochloric acid (HCl)**, 0,3 mol/l solution