



SLOVENSKI STANDARD
SIST EN 17917:2024

01-marec-2024

Papir, karton in lepenka - Papier, karton in lepenka, namenjeni neposrednemu stiku z živili - Ugotavljanje aluminija v vodnih ekstraktih

Paper and board - Paper and board intended to come into contact with foodstuffs - Determination of aluminium in aqueous extracts

Papier und Pappe - Papier und Pappe für den Kontakt mit Lebensmitteln - Bestimmung von Aluminium in wässrigen Extrakten

Papier et carton - Papiers et cartons destinés à entrer en contact avec les denrées alimentaires - Détermination de l'aluminium dans un extrait aqueux

Ta slovenski standard je istoveten z: EN 17917:2023

[SIST EN 17917:2024](https://standards.sist.net/sist/en/17917/2024)

ICS:

67.250	Materiali in predmeti v stiku z živili	Materials and articles in contact with foodstuffs
85.060	Papir, karton in lepenka	Paper and board

SIST EN 17917:2024

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 17917

December 2023

ICS 67.250; 85.060

English Version

**Paper and board - Paper and board intended to come into
contact with foodstuffs - Determination of aluminium in
aqueous extracts**

Papier et carton - Papiers et cartons destinés à entrer
en contact avec les denrées alimentaires -
Détermination de l'aluminium dans un extrait aqueux

Papier und Pappe - Papier und Pappe für den Kontakt
mit Lebensmitteln - Bestimmung von Aluminium in
wässrigen Extrakten

This European Standard was approved by CEN on 20 November 2023.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 17917:2023) 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 June 2024, and conflicting national standards shall be withdrawn at the latest by June 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 is one in a series of standards for the determination of metals in aqueous extracts of paper and board intended for contact with food.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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EN 17917:2023 (E)

1 Scope

This document specifies a test method for the determination of aluminium in aqueous extracts.

It is applicable to paper and board with extractable aluminium content of at least 0,2 mg/l.

Aluminium extract levels below those given can be measured using this document if 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*

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

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:

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

4 Principle

An aliquot portion from the cold water extract according to EN 645 or hot water extract according to EN 647 (see Clause 7) is analysed by inductively coupled plasma optical emission spectrometry (ICP OES) or by inductively coupled plasma mass spectrometry (ICP MS).

AAS (atomic absorption spectrometry with graphite furnace) may be used, if validated.

5 Reagents

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

- 5.1 **Water grade 1** according to EN ISO 3696 with conductivity $\leq 0,01$ mS/m.
- 5.2 **Nitric acid (HNO₃)**, with a mass fraction of 65 % or similar quality.
- 5.3 **Nitric acid (5.2)**, diluted to a volume fraction of 7 % with water (5.1).
- 5.4 **Aluminium stock solution (Al)** with a concentration of 1 000 mg/l.

The stock solutions are reference materials such as defined in the ISO GUIDE 30. The solution with a single element with their suited specifications indicating the acid used and the method of preparation is