

Influence of materials on water intended for human consumption - Influence due to migration - Part 4: Test method for water treatment membranes

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

|                                                                                                                     |                                                                                                                                                      |
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English Version

**Influence of materials on water intended for human  
consumption - Influence due to migration - Part 4: Test  
method for water treatment membranes**

Influence des matériaux sur l'eau destinée à la  
consommation humaine - Influence due à la migration -  
Partie 4: Méthode d'essai des membranes des systèmes  
de traitement d'eau

Einfluss von Materialien auf Wasser für den  
menschlichen Gebrauch - Einfluss infolge der Migration  
- Teil 4: Prüfverfahren für Membranen für die  
Wasserbehandlung

This European Standard was approved by CEN on 10 October 2021.

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

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## European foreword

This document (EN 12873-4:2021) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by May 2022, and conflicting national standards shall be withdrawn at the latest by May 2022.

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 12873-4:2006.

It has been drawn up with the objective to describe a test method to determine the migration of substances from water treatment membranes.

[Annex A](#), which is informative, provides a flow diagram of the steps in the test procedure.

[Annex B](#), which is informative, describes a test rig.

This document is the fourth in a series of standards dealing with the influence of migration from materials on water intended for human consumption, including:

- Part 1, *Test method for factory-made products made from or incorporating organic or glassy (porcelain/vitreous enamel) materials*;
- Part 2, *Test method for non-metallic and non-cementitious site-applied materials*;
- Part 3, *Test method for ion exchange and adsorbent resins*;
- Part 4, *Test method for water treatment membranes*.

The significant technical difference between this edition and EN 12873-4:2006 are as follows:

- New definitions and editorial changes to existing definitions.
- Change to temperature of operation if not provided by the manufacturer.
- General editorial, structural changes and clarification throughout the document.

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, Turkey and the United Kingdom.

## **Introduction**

In respect of potential adverse effects on the quality of water intended for human consumption caused by the materials, it is called to mind that, while awaiting the adoption of verifiable European acceptance criteria, the relevant national regulations remain in force.

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## 1 Scope

This document describes a test method for laboratory evaluation of possible adverse effects of water treatment membrane elements and modules on drinking water quality.

In principle it is applicable to microfiltration, ultrafiltration, nanofiltration, reverse osmosis and electrodialysis modules for use in the treatment of public water supplies and of water inside buildings.

**NOTE** Such devices can vary considerably in design and operation and hence some modification of the procedures can be required.

Evaluation of the efficiency of the membrane filter in removing contaminants from the treated water is not included.

## 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 3696:1995, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)*

## 3 Terms and definitions

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

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>

### 3.1

#### **analytical sample**

portion of the migration water collected for the determination of specified water quality parameters

### 3.2

#### **cell pair**

basic unit of electrodialysis systems consisting of a cation transfer membrane, a dilute flow (product) spacer, an anion transfer membrane and a concentrate (waste) spacer

### 3.3

#### **cleaning and/or disinfection agent**

chemical solution passed through the membrane element/module either in response to changes in the performance of the membrane or at fixed times or volumes to remove solids or biofilm build up from the membrane to improve efficiency

### 3.4

#### **concentrate**

permeate and reject water returned to the reservoir of test water to be pumped back through the membrane element/module resulting in a concentration of migrating substances from the membrane element/module