

Chemicals used for treatment of water intended for
human consumption - Hydrogen peroxide

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 902:2016 sisaldab Euroopa standardi EN 902:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 902:2016 consists of the English text of the European standard EN 902:2016.
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 25.05.2016.	Date of Availability of the European standard is 25.05.2016.
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 71.100.80

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:

Aru 10, 10317 Tallinn, Eesti; koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Chemicals used for treatment of water intended for human consumption - Hydrogen peroxide

Produits chimiques utilisés pour le traitement de l'eau
destinée à la consommation humaine - Peroxyde
d'hydrogène

Produkte zur Aufbereitung von Wasser für den
menschlichen Gebrauch - Wasserstoffperoxid

This European Standard was approved by CEN on 18 March 2016.

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.

CEN members are the national standards bodies of 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 United Kingdom.



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

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

Contents	Page
European foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Description	6
3.1 Identification	6
3.1.1 Chemical name	6
3.1.2 Synonym or common name	6
3.1.3 Relative molecular mass.....	6
3.1.4 Empirical formula	6
3.1.5 Chemical formula	6
3.1.6 CAS Registry Number	6
3.1.7 EINECS reference	7
3.2 Commercial form.....	7
3.3 Physical properties.....	7
3.3.1 Appearance and odour.....	7
3.3.2 Density	7
3.3.3 Solubility in water.....	7
3.3.4 Vapour pressure.....	7
3.3.5 Boiling point at 100 kPa	7
3.3.6 Crystallization point.....	8
3.3.7 Specific heat	8
3.3.8 Viscosity, dynamic	8
3.3.9 Critical temperature	9
3.3.10 Critical pressure	9
3.3.11 Physical hardness	9
3.4 Chemical properties.....	9
4 Purity criteria.....	9
4.1 General.....	9
4.2 Composition of commercial product.....	10
4.3 Impurities and main by-products	10
4.4 Chemical parameters.....	10
5 Test methods	10
5.1 Sampling.....	10
5.2 Analysis.....	10
5.2.1 Determination of hydrogen peroxide content (main product).....	10
5.2.2 Chemical parameters.....	13
6 Labelling - Transportation - Storage	15
6.1 Means of delivery	15
6.2 Labelling according to the EU Legislation	15
6.3 Transportation regulations and labelling.....	19
6.4 Marking.....	19
6.5 Storage	19
6.5.1 Containers.....	19

6.5.2	Long term stability	19
6.5.3	Storage incompatibilities.....	20
Annex A (informative) General information on hydrogen peroxide		21
A.1	Origin	21
A.1.1	Raw materials	21
A.1.2	Manufacturing process	21
A.2	Use	21
A.2.1	Function	21
A.2.2	Form in which it is used.....	21
A.2.3	Treatment dose	21
A.2.4	Means of application.....	21
A.2.5	Secondary effects	21
A.2.6	Removal of excess product.....	21
A.3	Routine analyses	22
A.3.1	Determination of chemical parameters	22
Annex B (normative) General rules relating to safety.....		23
B.1	Rules for safe handling and use.....	23
B.2	Emergency procedures.....	23
B.2.1	First aid	23
B.2.2	Spillage	23
B.2.3	Fire	23
Annex C (normative) Determination of arsenic, antimony and selenium (atomic absorption spectrometry hydride technique)		24
C.1	Safety precautions	24
C.2	General principle	24
C.3	Interferences	24
C.4	Reagents.....	24
C.5	Apparatus	26
C.6	Procedure	28
C.6.1	Preparation of the apparatus	28
C.6.2	Preparation of calibration solutions	29
C.6.3	Preparation of test solutions and standard solutions.....	29
C.6.4	Determination of arsenic with sodium borohydride.....	29
C.6.5	Determination of selenium with sodium borohydride.....	29
C.6.6	Determination of antimony with sodium borohydride.....	30
C.7	Calculation.....	30
Bibliography		31

European foreword

This document (EN 902:2016) 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 November 2016, and conflicting national standards shall be withdrawn at the latest by November 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.

This document supersedes EN 902:2009.

Significant technical differences between this edition and EN 902:2009 are as follows:

- a) deletion of the reference to EU Directive 67/548/EEC of June 27, 1967 in order to take into account the latest Directive in force (see [1]);
- b) use of the changed classification and labelling (see [3]).

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.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this European Standard:

- 1) this European Standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;
- 2) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

NOTE 1 Conformity with this standard does not confer or imply acceptance or approval of the product in any of the Member States of the EU or EFTA. The use of the product covered by this European Standard is subject to regulation or control by National Authorities.

NOTE 2 This product is a biocide and needs to comply with the relevant legislation in force. In the European Union, at the time of publication, this legislation is REGULATION (EU) No 528/2012 [1].

1 Scope

This European Standard is applicable only to hydrogen peroxide and not to mixtures with other chemicals used for treatment of water intended for human consumption. It describes the characteristics of hydrogen peroxide and specifies the requirements and the corresponding test methods for hydrogen peroxide. It gives information on its use in water treatment. It also determines the rules relating to safe handling and use (see Annex B).

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

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

ISO 3165, *Sampling of chemical products for industrial use — Safety in sampling*

ISO 6206, *Chemical products for industrial use — Sampling — Vocabulary*

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

ISO 9174, *Water quality — Determination of chromium — Atomic absorption spectrometric methods*

3 Description

3.1 Identification

3.1.1 Chemical name

Hydrogen peroxide.

3.1.2 Synonym or common name

None.

3.1.3 Relative molecular mass

34,02.

3.1.4 Empirical formula

H₂O₂.

3.1.5 Chemical formula

H-O-O-H.

3.1.6 CAS Registry Number¹⁾

7722-84-1.

1) Chemical Abstracts Service Registry Number.