

KEEMILISED DESINFEKTSIOONIVAHENDID JA  
ANTISEPTIKUMID. KVANTITATIIVNE  
SUSPENSIOONTEST BAKTERITSIIDSE TOIME  
MÄÄRAMISEKS MEDITSIINI VALDKONNAS.  
KATSEMEETOD JA NÕUDED (2. FAAS, 1. ETAPP)

Chemical disinfectants and antiseptics - Quantitative  
suspension test for the evaluation of bactericidal  
activity in the medical area - Test method and  
requirements (phase 2, step 1)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 13727:2012+A2:2015 sisaldab Euroopa standardi EN 13727:2012+A2:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 13727:2012+A2:2015 consists of the English text of the European standard EN 13727:2012+A2:2015.
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 28.10.2015.	Date of Availability of the European standard is 28.10.2015.
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](mailto:standardiosakond@evs.ee).

ICS 11.080.20

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](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto: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](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of bactericidal activity in the medical area - Test method and requirements (phase 2, step 1)

Antiseptiques et désinfectants chimiques - Essai quantitatif de suspension pour l'évaluation de l'activité bactéricide en médecine - Méthode d'essai et prescriptions (Phase 2, Étape 1)

Chemische Desinfektionsmittel und Antiseptika - Quantitativer Suspensionsversuch zur Bestimmung der bakteriziden Wirkung im humanmedizinischen Bereich - Prüfverfahren und Anforderungen (Phase 2, Stufe 1)

This European Standard was approved by CEN on 14 October 2013 and includes Amendment 2 approved by CEN on 3 August 2015.

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**

<b>Contents</b>	<b>Page</b>
European foreword.....	4
Introduction .....	5
<b>1 Scope</b> .....	<b>6</b>
<b>2 Normative references</b> .....	<b>6</b>
<b>3 Terms and definitions</b> .....	<b>6</b>
<b>4 Requirements</b> .....	<b>6</b>
<b>5 Test method</b> .....	<b>8</b>
<b>5.1 Principle</b> .....	<b>8</b>
<b>5.2 Materials and reagents</b> .....	<b>8</b>
<b>5.2.1 Test organisms</b> .....	<b>8</b>
<b>5.2.2 Culture media and reagents</b> .....	<b>9</b>
<b>5.3 Apparatus and glassware</b> .....	<b>11</b>
<b>5.3.1 General</b> .....	<b>11</b>
<b>5.3.2 Usual microbiological laboratory equipment</b> .....	<b>12</b>
<b>5.4 Preparation of test organism suspensions and product test solutions</b> .....	<b>13</b>
<b>5.4.1 Test organism suspensions (test and validation suspension)</b> .....	<b>13</b>
<b>5.4.2 Product test solutions</b> .....	<b>15</b>
<b>5.5 Procedure for assessing the bactericidal activity of the product</b> .....	<b>15</b>
<b>5.5.1 General</b> .....	<b>15</b>
<b>5.5.2 Dilution-neutralization method</b> .....	<b>17</b>
<b>5.5.3 Membrane filtration method</b> .....	<b>19</b>
<b>5.5.4 Modified method for ready-to-use products</b> .....	<b>21</b>
<b>5.6 Experimental data and calculation</b> .....	<b>23</b>
<b>5.6.1 Explanation of terms and abbreviations</b> .....	<b>23</b>
<b>5.6.2 Calculation</b> .....	<b>23</b>
<b>5.7 Verification of methodology</b> .....	<b>28</b>
<b>5.7.1 General</b> .....	<b>28</b>
<b>5.7.2 Control of weighted mean counts</b> .....	<b>28</b>
<b>5.7.3 Basic limits</b> .....	<b>29</b>
<b>5.8 Expression of results and precision</b> .....	<b>29</b>
<b>5.8.1 Reduction</b> .....	<b>29</b>
<b>5.8.2 Control of active and non-active product test solution (5.4.2)</b> .....	<b>29</b>
<b>5.8.3 Limiting test organism and bactericidal concentration</b> .....	<b>30</b>
<b>5.8.4 Precision, repetitions</b> .....	<b>30</b>
<b>5.9 Interpretation of results - conclusion</b> .....	<b>30</b>
<b>5.9.1 General</b> .....	<b>30</b>
<b>5.9.2 Bactericidal activity for handrub and handwash products</b> .....	<b>30</b>
<b>5.9.3 Bactericidal activity for instrument disinfection products</b> .....	<b>30</b>
<b>5.9.4 Bactericidal activity for surface disinfection products</b> .....	<b>31</b>
<b>5.9.5 Qualification for certain fields of application</b> .....	<b>31</b>
<b>5.10 Test report</b> .....	<b>31</b>
<b>Annex A (informative) Referenced strains in national collections</b> .....	<b>33</b>
<b>Annex B (informative) Neutralizers and rinsing liquids</b> .....	<b>34</b>

<b>Annex C (informative) Graphical representation of test procedures</b> .....	<b>36</b>
<b>Annex D (informative) Example of a typical test report</b> .....	<b>44</b>
<b>Annex E (informative) Precision of the test result</b> .....	<b>48</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 93/42/EEC</b> .....	<b>51</b>
<b>Bibliography</b> .....	<b>52</b>

This document is a preview generated by EVS

## European foreword

This document (EN 13727:2012+A2:2015) has been prepared by Technical Committee CEN/TC 216 "Chemical disinfectants and antiseptics", 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 April 2016, and conflicting national standards shall be withdrawn at the latest by April 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 includes Amendment 1 approved by CEN on 2013-10-14 and Amendment 2 approved by CEN on 2015-08-03.

This document supersedes <sup>A2</sup> EN 13727:2012+A1:2013 <sup>A2</sup>.

The start and finish of text introduced or altered by amendment is indicated in the text by tags <sup>A1</sup> <sup>A1</sup> and <sup>A2</sup> <sup>A2</sup>.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

<sup>A2</sup> *deleted text* <sup>A2</sup>

<sup>A1</sup> Data obtained using the former version of EN 13727 may still be used, if a neutralization time of 10 s for all products with contact times of 10 min or shorter has been demonstrated to be sufficient. Data obtained by using the prEN 12054 should not be used as this project was abandoned in 2001. <sup>A1</sup>

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

This European Standard specifies a suspension test for establishing whether a chemical disinfectant or an antiseptic has a bactericidal activity in the area and fields described in the scope.

This laboratory test takes into account practical conditions of application of the product including contact time, temperature, test organisms and interfering substances, i.e. conditions which may influence its action in practical situations. Each utilization concentration of the chemical disinfectant or antiseptic found by this test corresponds to the chosen experimental conditions.

This document is a preview generated by EVS

## 1 Scope

This European Standard specifies a test method and the minimum requirements for bactericidal activity of chemical disinfectant and antiseptic products that form a homogeneous, physically stable preparation when diluted with hard water, or - in the case of ready-to-use products - with water. Products can only be tested at a concentration of 80 % or less (97 % with a modified method for special cases) as some dilution is always produced by adding the test organisms and interfering substance.

This European Standard applies to products that are used in the medical area in the fields of hygienic handrub, hygienic handwash, surgical handrub, surgical handwash, instrument disinfection by immersion, and surface disinfection by wiping, spraying, flooding or other means.

This European Standard applies to areas and situations where disinfection or antiseptics is medically indicated. Such indications occur in patient care, for example:

- in hospitals, in community medical facilities and in dental institutions;
- in clinics of schools, of kindergartens and of nursing homes;

and may occur in the workplace and in the home. It may also include services such as laundries and kitchens supplying products directly for the patients.

NOTE 1 The method described is intended to determine the activity of commercial formulations or active substances under the conditions in which they are used.

NOTE 2 This method corresponds to a phase 2 step 1 test.

NOTE 3 This method cannot be used to evaluate the activity of products against *Legionella* in watersystems against mycobacteria and against bacterial spores.

EN 14885 specifies in detail the relationship of the various tests to one another and to “use recommendations”.

## 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 12353, *Chemical disinfectants and antiseptics - Preservation of test organisms used for the determination of bactericidal (including Legionella), mycobactericidal, sporicidal, fungicidal and virucidal (including bacteriophages) activity*

EN 14885, *Chemical disinfectants and antiseptics - Application of European Standards for chemical disinfectants and antiseptics*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14885 apply.

## 4 Requirements

The product shall demonstrate at least a 5 decimal log (lg) reduction (for hygienic hand wash at least a 3 lg reduction), when tested in accordance with Table 1 and Clause 5.