

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12353:2021 sisaldab Euroopa standardi EN 12353:2021 ingliskeelset teksti.	This Estonian standard EVS-EN 12353:2021 consists of the English text of the European standard EN 12353:2021.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.09.2021.	Date of Availability of the European standard is 01.09.2021.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 11.080.20, 71.100.35

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

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

Kui Teil on küsimusi standardite autoriõiguse kaitse kohta, võtke palun ühendust Eesti Standardimis- ja Akrediteerimiskeskusega: 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 and Accreditation

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 and Accreditation.

If you have any questions about standards copyright protection, please contact the Estonian Centre for Standardisation and Accreditation: Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

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

Antiseptiques et désinfectants chimiques -
Conservation des micro-organismes d'essai utilisés
pour la détermination de l'activité bactéricide
(*Legionella* incluses), mycobactéricide, sporicide,
fongicide et virucide (bactériophages inclus)

Chemische Desinfektionsmittel und Antiseptika -
Aufbewahrung von Prüforganismen für die Prüfung
der bakteriziden (einschließlich *Legionella*),
mykobakteriziden, sporiziden, fungiziden und
viruziden (einschließlich Bakteriophagen) Wirkung

This European Standard was approved by CEN on 1 February 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.

CEN members are the national standards bodies of 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 United Kingdom.



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

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

Contents

Page

European foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	6
4 Requirements	6
5 Methods	7
5.1 Principle	7
5.2 Test organisms, culture media and reagents.....	7
5.2.1 Test organisms.....	7
5.2.2 Culture media and reagents	7
5.2.3 Cell cultures.....	14
5.2.4 Host strains for dairy bacteriophages (<i>Lactococcus lactis</i>).....	15
5.3 Apparatus and glassware	16
5.3.1 General.....	16
5.3.2 Usual microbiological laboratory equipment.....	16
5.4 Procedure for preservation of test organisms – General	17
5.4.1 Handling of freeze-dried / frozen test organisms from culture collections	17
5.4.2 Choice of incubation procedure, agar medium, cell culture/cell line.....	17
5.5 Procedure for preservation of bacteria (incl. <i>Legionella</i> , aerobic spore-forming bacteria, excl. mycobacteria and bacterial spores) and yeasts	18
5.5.1 Reconstitution of the freeze-dried test organisms.....	18
5.5.2 Preparation for storage	18
5.5.3 Preparation of stock culture / working cultures.....	19
5.6 Procedure for preservation of mycobacteria	19
5.6.1 Reconstitution of the freeze-dried test organisms	19
5.6.2 Preparation for storage	19
5.6.3 Preparation of working cultures	20
5.7 Procedure for preservation of moulds (e.g. <i>Aspergillus brasiliensis</i>)	20
5.7.1 Reconstitution of the freeze-dried test organism	20
5.7.2 Preparation for storage	20
5.7.3 Preparation of stock culture / working cultures.....	21
5.8 Procedure for preservation of viruses (except dairy bacteriophages)	21
5.8.1 Reconstitution of frozen virus.....	21
5.8.2 Preparation for storage of stock virus suspension	21
5.8.3 Preparation of test virus suspension	21
5.9 Procedure for preservation of bacteriophages	22
5.9.1 Reconstitution of frozen bacteriophages	22
5.9.2 Preparation for storage	22
5.9.3 Preparation of bacteriophages working suspensions.....	22
5.10 Verification of the purity and identity of test organisms	22
5.10.1 General.....	22
5.10.2 Information on source of strains.....	23
5.10.3 Purity.....	23
5.10.4 Identity.....	23
5.11 Documentation.....	23

5.11.1 General	23
5.11.2 Freeze-dried test organism / frozen viruses	23
5.11.3 Cryovials of frozen test organism	23
5.11.4 Stock culture.....	24
5.11.5 Verification of purity and identity.....	24
5.11.6 Storage of documentation	24
Annex A (informative) Test organisms – Culture collection references and relation to CEN/TC 216 standards.....	25
Annex B (informative) Graphical representations.....	29
Bibliography	34

European foreword

This document (EN 12353:2021) 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 March 2022, and conflicting national standards shall be withdrawn at the latest by March 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 12353:2013.

The document was revised to adapt it to the latest state of science, to correct errors and ambiguities. The following are the significant technical changes since the last edition:

- the methods of preservation of viruses are described more detailed (5.8);
- MEM is not the only suitable cell culture medium, therefore it was replaced by the general term “cell culture medium” (5.2.2.17 and in the whole text);
- the description of BCYE Agar for *Legionella* was added (5.2.2.24);
- the information on source of strains was added (5.10.2);
- the information of the storage of documentation was added (5.11.6);
- *Clostridioides difficile* (A.3.3) was added;
- the CIP numbers for fungi were deleted (replaced by UMIP numbers) (see A.4);
- the used virus strains are re-drafted (see A.5).

The changes mentioned above have no impact on the test results obtained with reference to the previous version. Those results are still valid.

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

Standardized tests for the determination of bactericidal (incl. *Legionella pneumophila*), mycobactericidal, sporicidal, fungicidal and virucidal (incl. bacteriophages) activity of chemical disinfectants and antiseptics necessitate the use of test organisms whose purity and identity have been verified and whose biological behaviour remains stable. Therefore, it is essential to specify the storage requirements.

This document aims to describe methods for preservation of test organisms used for such purposes.

This document is a preview generated by EVS

1 Scope

This document specifies methods for keeping test organisms used and defined in European Standards for the determination of bactericidal (incl. *Legionella pneumophila*), mycobactericidal, sporicidal, fungicidal and virucidal (incl. bacteriophages) activity of chemical disinfectants and antiseptics drawn up by CEN/TC 216. These methods for keeping test organisms can only be carried out in connection with at least one of those standards where a reference to this document is established.

NOTE 1 Annex A (informative) contains a non-exhaustive list of test organisms for which this document can be applied.

NOTE 2 European Standards (EN) where this document is referenced are listed in the Bibliography.

NOTE 3 A specific description on the preservation of bacterial spores could be added once the results of the ongoing ring trials are available.

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 13610, *Chemical disinfectants — Quantitative suspension test for the evaluation of virucidal activity against bacteriophages of chemical disinfectants used in food and industrial areas — Test method and requirements (phase 2, step 1)*

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

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

4 Requirements

Each test organism specified in a CEN/TC 216 European Standard and referred to in this document shall be handled as described in this document. An overview of the CEN/TC 216 standards and the specification of which standards products shall comply with in order to support specific microbicidal activity claims are summarised in EN 14885.

The purity and identity of the preserved test organism shall be verified during the preparation and regularly during the storage, except for viruses where only the identity is checked before the stock virus suspension is stored.

The preserved test organisms – including the viruses especially in connection with the used cell lines – should be checked at regular intervals (at least in the case of longer storage than 14 months) to ensure that its susceptibility to products has not changed. For all standards where there is no internal standard implemented the test organisms' susceptibility should be checked using relevant reference substances.