

TOIDUAHELA MIKROBIOLOOGIA. KATSEPROOVIDE,
ALGSUSPENSIOONI JA KÜMNENDLAHJENDUSTE
ETTEVALMISTAMINE MIKROBIOLOOGILISEKS
UURINGUKS. OSA 1: ÜLDEESKIRJAD ALGSUSPENSIOONI
JA KÜMNENDLAHJENDUSTE VALMISTAMISEKS

Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 1: General rules for the preparation of the initial suspension and decimal dilutions (ISO 6887-1:2017)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 6887-1:2017 sisaldab Euroopa standardi EN ISO 6887-1:2017 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 6887-1:2017 consists of the English text of the European standard EN ISO 6887-1:2017.
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 05.04.2017.	Date of Availability of the European standard is 05.04.2017.
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 07.100.30

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:

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:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English Version

Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 1: General rules for the preparation of the initial suspension and decimal dilutions (ISO 6887-1:2017)

Microbiologie de la chaîne alimentaire - Préparation des échantillons, de la suspension mère et des dilutions décimales en vue de l'examen microbiologique - Partie 1: Règles générales pour la préparation de la suspension mère et des dilutions décimales (ISO 6887-1:2017)

Mikrobiologie der Lebensmittelkette - Vorbereitung von Untersuchungsproben und Herstellung von Erstverdünnungen und von Dezimalverdünnungen für mikrobiologische Untersuchungen - Teil 1: Allgemeine Regeln für die Herstellung von Erstverdünnungen und Dezimalverdünnungen (ISO 6887-1:2017)

This European Standard was approved by CEN on 14 January 2017.

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, 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: Avenue Marnix 17, B-1000 Brussels

European foreword

This document (EN ISO 6887-1:2017) has been prepared by Technical Committee ISO/TC 34 "Food products" in collaboration with Technical Committee CEN/TC 275 "Food analysis - Horizontal methods" 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 October 2017, and conflicting national standards shall be withdrawn at the latest by October 2017.

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 ISO 6887-1:1999.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 6887-1:2017 has been approved by CEN as EN ISO 6887-1:2017 without any modification.

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	3
5 Diluents	3
5.1 Basic materials	3
5.2 Diluents for general use	3
5.2.1 Peptone salt solution	3
5.2.2 Buffered peptone water	4
5.2.3 Double-strength buffered peptone water	4
5.3 Diluents for special purposes	4
5.4 Distribution and sterilization of the diluent	4
5.5 Performance testing for diluents	5
6 Apparatus	5
7 Sampling	6
8 Preparation of samples	6
8.1 General	6
8.2 Frozen products	7
8.2.1 General	7
8.2.2 Small samples defrosted before testing	7
8.2.3 Large pieces or blocks sampled while frozen	7
8.3 Hard and dry products	8
8.4 Dehydrated and other low-moisture products	8
8.5 Liquid and non-viscous products	8
8.6 Acidic products	8
8.7 High-fat (over 20 %) foods	9
8.8 Multi-component products	9
8.9 Packaged products	9
8.10 Surface samples (swabs and other devices)	10
9 Specific procedures	10
9.1 Test portion and initial suspension (primary dilution)	10
9.2 Duration of the procedure	11
9.3 Pooling and compositing procedures for qualitative tests	11
10 Further dilutions	11
10.1 Decimal dilution series	11
10.2 Other dilution series	12
Annex A (informative) Illustrations of pooling and compositing procedures	13
Annex B (informative) Method for sampling frozen test pieces or blocks	18
Annex C (informative) Data showing reliability of test results according to size of test portions	20
Annex D (informative) Verification protocol for pooling samples for qualitative tests	23
Bibliography	26

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 9, *Microbiology*.

This second edition cancels and replaces the first edition (ISO 6887-1:1999), which has been technically revised.

A list of parts in the ISO 6887 series can be found on the ISO website.

Introduction

Because of the large variety of food and animal feed products, this horizontal method might not be appropriate in every detail for certain products. In this case, different methods which are specific to these products can be used if absolutely necessary for justified technical reasons.

When this document is next reviewed, account will be taken of all information then available regarding the extent to which this horizontal method has been followed and the reasons for deviations from this method in the case of particular products.

The harmonization of test methods cannot be immediate and for certain groups of products, International Standards and/or national standards may already exist that do not comply with this horizontal method. It is hoped that when such standards are reviewed, they will be changed to comply with this document so that eventually, the only remaining departures from this horizontal method will be those necessary for well-established technical reasons.

This document defines the general rules for the preparation of samples, initial suspensions and subsequent dilutions for microbiological examination. The remaining parts of ISO 6887 give specific rules for the preparation of samples and initial suspensions, each covering the variety of food and feed products and environmental samples to which ISO 6887 applies.

For a number of products, it is necessary to take special precautions, especially when preparing the initial suspension, because of the physical state of the product (such as dry products, highly viscous products) or the presence of inhibitory substances (such as spices, high salt content) or the acidity, etc. These are covered in general terms in this document.

Any special diluents or practices required for particular products or microorganisms in specific standard methods take priority over the general rules listed in the ISO 6887 series. These can include the following:

- specific rehydration procedures for foods of low water activity to minimize osmotic shock;
- the use of adequate temperatures to aid suspension of cocoa, gelatine, milk powder, etc.;
- resuscitation procedures for the improved recovery of stressed microorganisms resulting from food processing and storage;
- homogenization procedures and duration specific to certain products (e.g. cereals) and/or to certain determinations (e.g. yeasts and moulds).

Microbiology of the food chain — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination —

Part 1: General rules for the preparation of the initial suspension and decimal dilutions

WARNING — The use of this document may involve hazardous materials, operations and equipment. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before use.

1 Scope

This document defines general rules for the aerobic preparation of the initial suspension and of dilutions for microbiological examinations of products intended for human or animal consumption.

This document is applicable to the general case and other parts apply to specific groups of products as mentioned in the foreword. Some aspects might also be applicable to molecular methods where matrices can be associated with inhibition of the PCR steps and consequently affect the test result.

This document excludes preparation of samples for both enumeration and detection test methods where preparation instructions are detailed in specific International Standards.

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.

ISO 7218, *Microbiology of food and animal feeding stuffs — General requirements and guidance for microbiological examinations*

ISO 11133, *Microbiology of food, animal feed and water — Preparation, production, storage and performance testing of culture media*

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

3.1

laboratory sample

sample prepared for sending to the laboratory and intended for inspection or testing

[SOURCE: ISO 7002:1986, A.19]