

# SVENSK STANDARD

## SS-EN ISO 6887-5:2020

**Mikrobiologi i livsmedelskedjan – Provberedning, initial suspension och decimala utspädningar för mikrobiologisk undersökning –**

**Del 5: Specifika regler för beredning av mjölk och mjölkprodukter (ISO 6887-5:2020)**

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



**sis** Svenska  
Institutet för  
Standarder

Language: engelska/English

Edition: 2

This preview is downloaded from [www.sis.se](http://www.sis.se). Buy the entire standard via <https://www.sis.se/std-80022073>

Den här standarden kan hjälpa dig att effektivisera och kvalitetssäkra ditt arbete. SIS har fler tjänster att erbjuda dig för att underlätta tillämpningen av standarder i din verksamhet.

#### **SIS Abonnemang**

Snabb och enkel åtkomst till gällande standard med SIS Abonnemang, en prenumerationstjänst genom vilken din organisation får tillgång till all världens standarder, senaste uppdateringarna och där hela din organisation kan ta del av innehållet i prenumerationen.

#### **Utbildning, event och publikationer**

Vi erbjuder även utbildningar, rådgivning och event kring våra mest sålda standarder och frågor kopplade till utveckling av standarder. Vi ger också ut handböcker som underlättar ditt arbete med att använda en specifik standard.

#### **Vill du delta i ett standardiseringsprojekt?**

Genom att delta som expert i någon av SIS 300 tekniska kommittéer inom CEN (europeisk standardisering) och/eller ISO (internationell standardisering) har du möjlighet att påverka standardiseringsarbetet i frågor som är viktiga för din organisation. Välkommen att kontakta SIS för att få veta mer!

#### **Kontakt**

Skriv till [kundservice@sis.se](mailto:kundservice@sis.se), besök [sis.se](https://www.sis.se) eller ring 08 - 555 523 10

---

© Copyright/Upphovsrätten till denna produkt tillhör Svenska institutet för standarder, Stockholm, Sverige. Upphovsrätten och användningen av denna produkt regleras i slutanvändarlicensen som återfinns på [sis.se/slutanvandarlicens](https://www.sis.se/slutanvandarlicens) och som du automatiskt blir bunden av när du använder produkten. För ordlista och förkortningar se [sis.se/ordlista](https://www.sis.se/ordlista).

© Copyright Svenska institutet för standarder, Stockholm, Sweden. All rights reserved. The copyright and use of this product is governed by the end-user licence agreement which you automatically will be bound to when using the product. You will find the licence at [sis.se/enduserlicenseagreement](https://www.sis.se/enduserlicenseagreement).

Upplysningar om sakinnehållet i standarden lämnas av Svenska institutet för standarder, telefon 08 - 555 520 00. Standarder kan beställas hos SIS som även lämnar allmänna upplysningar om svensk och utländsk standard.

Standarden är framtagen av kommittén för Livsmedelsanalyser, SIS/TK 435/AG 05.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på [www.sis.se](https://www.sis.se) - där hittar du mer information.

Europastandarden EN ISO 6887-5:2020 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN ISO 6887-5:2020.

Denna standard ersätter SS-EN ISO 6887-5:2010, utgåva 1

The European Standard EN ISO 6887-5:2020 has the status of a Swedish Standard. This document contains the official version of EN ISO 6887-5:2020.

This standard supersedes the SS-EN ISO 6887-5:2010, edition 1



EUROPEAN STANDARD

EN ISO 6887-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2020

ICS 07.100.30

Supersedes EN ISO 6887-5:2010

English Version

**Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 5: Specific rules for the preparation of milk and milk products (ISO 6887-5:2020)**

Microbiologie de la chaîne alimentaire - Préparation des échantillons, de la suspension mère et des dilutions décimales en vue de l'examen microbiologique - Partie 5: Règles spécifiques pour la préparation du lait et des produits laitiers(ISO 6887-5:2020)

Mikrobiologie von Lebensmitteln und Futtermitteln - Vorbereitung von Untersuchungsproben und Herstellung von Erstverdünnungen und von Dezimalverdünnungen für mikrobiologische Untersuchungen - Teil 5: Spezifische Regeln für die Vorbereitung von Milch und Milcherzeugnissen (ISO 6887-5:2020)

This European Standard was approved by CEN on 19 April 2020.

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: Avenue Marnix 17, B-1000 Brussels**

# Contents

Page

<b>Foreword</b> .....	<b>vii</b>
<b>European foreword</b> .....	<b>viii</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Principle</b> .....	<b>2</b>
<b>5 Diluents</b> .....	<b>2</b>
5.1 List of diluents.....	2
5.2 Distribution and sterilization of the diluents .....	5
5.3 Performance testing for diluents .....	5
<b>6 Apparatus</b> .....	<b>6</b>
<b>7 Sampling</b> .....	<b>6</b>
<b>8 General procedures</b> .....	<b>6</b>
8.1 General .....	6
8.2 Frozen products .....	6
8.3 Hard and dry products .....	7
8.4 Liquid and non-viscous products .....	7
8.5 Multi-component products.....	7
8.6 Acidic products .....	7
8.7 High-fat foods (fat content > 20 % mass fraction) .....	7
<b>9 Specific procedures</b> .....	<b>7</b>
9.1 Milk and liquid milk products .....	7
9.2 Dehydrated milk, dehydrated sweet whey, dehydrated acid whey, dehydrated buttermilk and lactose.....	7
9.3 Cheese and cheese products .....	8
9.4 Acid casein, lactic casein, rennet casein and caseinate .....	8
9.4.1 General case.....	8
9.4.2 Special case: Rennet casein.....	8
9.5 Butter .....	8
9.6 Milk-based ice-cream .....	9
9.7 Milk-based custard, desserts and sweet cream (pH > 5).....	9
9.8 Milk-based fermented milks, yogurt, probiotics milk products and sour cream (pH < 5).....	9
9.9 Dehydrated milk-based infant foods with or without probiotics .....	9
<b>10 Further decimal dilutions</b> .....	<b>10</b>
<b>Bibliography</b> .....	<b>11</b>

## 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](http://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](http://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 of the voluntary nature of standards, 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 [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 9, *Microbiology*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 463, *Microbiology of the food chain*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 6887-5:2010), which has been technically revised. The main changes compared with the previous edition are as follows:

- the document has been aligned with ISO 6887-1, ISO 6887-2, ISO 6887-3 and ISO 6887-4;
- cross references have been added to ISO 6887-1 where relevant.

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## European foreword

This document (EN ISO 6887-5:2020) has been prepared by Technical Committee ISO/TC 34 "Food products" in collaboration with Technical Committee CEN/TC 463 "Microbiology of the food chain" 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 2020, and conflicting national standards shall be withdrawn at the latest by November 2020.

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 ISO 6887-5:2010.

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, 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.

### Endorsement notice

The text of ISO 6887-5:2020 has been approved by CEN as EN ISO 6887-5:2020 without any modification.



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

## Part 5: Specific rules for the preparation of milk and milk products

**WARNING** — The use of this document can 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 specifies rules for the preparation of samples of milk and milk products and their suspensions for microbiological examination when the samples require a different preparation from the general methods specified in ISO 6887-1.

This document excludes the preparation of samples for both enumeration and detection test methods where preparation details are specified in the relevant International Standards.

This document is intended to be used in conjunction with ISO 6887-1.

This document is applicable to:

- a) milk and liquid milk products;
- b) dehydrated milk products;
- c) cheese and cheese products;
- d) casein and caseinates;
- e) butter;
- f) milk-based ice-cream;
- g) milk-based custard, desserts and sweet cream;
- h) fermented milks, yogurt, probiotics milk products and sour cream;
- i) dehydrated milk-based infant foods, with or without probiotics.

### 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 6887-1, *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 7218, *Microbiology of food and animal feeding stuffs — General requirements and guidance for microbiological examinations*

## SS-EN ISO 6887-5:2020 (E)

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 terms and definitions given in ISO 6887-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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

### 4 Principle

The general principles for sample preparation and subsequent steps are detailed in ISO 6887-1. This document describes specific sample preparation for milk and milk products.

### 5 Diluents

#### 5.1 List of diluents

Follow current laboratory practices as specified in ISO 7218. The composition of culture media and reagents and their preparation are specified in ISO 6887-1 or in the following procedures.

**5.1.1 Basic materials.** See ISO 6887-1.

**5.1.2 Diluents for general use.** Peptone salt solution, buffered peptone water and double-strength buffered peptone water are described in ISO 6887-1.

##### 5.1.2.1 Quarter-strength Ringer's solution.

###### 5.1.2.1.1 Composition

Sodium chloride (NaCl) (CAS No. 7647-14-5)	2,25 g
Potassium chloride (KCl) (CAS No. 7447-40-7)	0,105 g
Calcium chloride anhydrous (CaCl <sub>2</sub> ) (CAS No. 10043-52-4)	0,06 g <sup>a</sup>
Sodium hydrogen carbonate (NaHCO <sub>3</sub> ) (Cas No. 144-55-8)	0,05 g
Water	1 000 ml

<sup>a</sup> Alternatively, use 0,12 g of CaCl<sub>2</sub>·6H<sub>2</sub>O (CAS No. 10035-04-8).

###### 5.1.2.1.2 Preparation

Dissolve the salts in the water. Adjust the pH, if necessary, so that after sterilization it is  $6,9 \pm 0,2$  at 25 °C.

### 5.1.2.2 Peptone solution.

#### 5.1.2.2.1 Composition

Enzymatic digest of casein	1,0 g
Water	1 000 ml

#### 5.1.2.2.2 Preparation

Dissolve the peptone in the water. Adjust the pH, if necessary, so that after sterilization it is  $7,0 \pm 0,2$  at 25 °C.

### 5.1.2.3 Phosphate buffer solution.

#### 5.1.2.3.1 Composition

Potassium dihydrogen phosphate (anhydrous) ( $\text{KH}_2\text{PO}_4$ ) (CAS No. 7778-77-0)	42,5 g
Water	1 000 ml

#### 5.1.2.3.2 Preparation

Dissolve the salt in 500 ml of water. Adjust the pH, if necessary, so that after sterilization it is  $7,2 \pm 0,2$  at 25 °C. Dilute to 1 000 ml with the remaining water.

Store the stock solution under refrigerated conditions.

Add 1 ml of this stock solution to 1 000 ml of water for use as diluent.

**5.1.3 Diluents for special purposes.** These diluents shall only be used for the preparation of initial suspensions.

### 5.1.3.1 Sodium citrate solution.

#### 5.1.3.1.1 Composition

Trisodium citrate dihydrate ( $\text{Na}_3\text{C}_6\text{H}_5\text{O}_7 \cdot 2\text{H}_2\text{O}$ ) (CAS No. 6132-04-3)	20,0 g
Water	1 000 ml

#### 5.1.3.1.2 Preparation

Dissolve the salt in water by heating, if necessary, on a hotplate (6.3) at a temperature between 45 °C and 50 °C. Adjust the pH, if necessary, so that after sterilization it is  $7,5 \pm 0,2$  at 25 °C.

#### 5.1.3.1.3 Application

This solution is used for cheese and (roller-)dried milk, and some caseinates.