

**Meditsiiniseadmete valmistamisel kasutatavad loomsed koed ja nende tuletised. Osa 3: Viiruste ja muude ülekantavate toimeainete kõrvaldamise ja/või inaktiveerimise valideerimine**

Animal tissues and their derivatives utilized in the manufacture of medical devices - Part 3: Validation of the elimination and/or inactivation of viruses and other transmissible agents

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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| <p>Käesolev Eesti standard EVS-EN 12442-3:2001 sisaldab Euroopa standardi EN 12442-3:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 16.02.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p> | <p>This Estonian standard EVS-EN 12442-3:2001 consists of the English text of the European standard EN 12442-3:2000.</p> <p>This document is endorsed on 16.02.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p> |
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| <p><b>Käsitlusala:</b><br/>This part of EN 12442 specifies requirements for the validation of elimination and/or inactivation of viruses and/or transmissible agents during the manufacture of medical devices (excluding in-vitro diagnostic medical devices) utilizing materials of animal origin. It is not applicable to bacteria, moulds and yeasts.</p> | <p><b>Scope:</b><br/>This part of EN 12442 specifies requirements for the validation of elimination and/or inactivation of viruses and/or transmissible agents during the manufacture of medical devices (excluding in-vitro diagnostic medical devices) utilizing materials of animal origin. It is not applicable to bacteria, moulds and yeasts.</p> |
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**Võtmesõnad:** derivatives, fabrics, handling, impurities, medical products, medical sciences, medicine, methods, pathogenic bacteria, production, risk, risk analysis, specification (approval), specifications, tissue, validation, winning, viruses

ICS 11.120.01

English version

Animal tissues and their derivatives utilized in the  
manufacture of medical devices

Part 3: Validation of the elimination and/or inactivation of viruses and  
transmissible agents

Tissus animaux et leurs dérivés  
utilisés dans la fabrication des  
dispositifs médicaux – Partie 3:  
Validation de l'élimination et/ou de  
l'inactivation des virus et autres  
agents transmissibles

Tierische Gewebe und deren Derivate,  
die zur Herstellung von Medizin-  
produkten eingesetzt werden – Teil 3:  
Validierung der Abreicherung und/  
oder Inaktivierung von Viren und  
übertragbaren Krankheitserregern

This European Standard was approved by CEN on 2000-04-20.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 316 "Medical devices utilizing tissues", the secretariat of which is held by IBN.

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 2000, and conflicting national standards shall be withdrawn at the latest by March 2000.

This European Standard 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 standard.

This Part of EN 12442 has been considered by CEN/TC 316 as one of a series of European Standards concerned with the development of European Standards for medical devices manufactured utilizing tissues or derivatives of animal origin, non-viable or rendered non-viable. These standards are :

- EN 12442-1 Animal tissues and their derivatives utilized in the manufacture of medical devices - Part 1: Analysis and management of risk.
- EN 12442-2 Animal tissues and their derivatives utilized in the manufacture of medical devices - Part 2: Controls on sourcing, collection and handling.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## Introduction

Certain medical devices may contain materials of animal origin.

The use of animal tissues and derivatives will give performance characteristics expected to be superior to non-animal based materials such as metal, plastics or textiles. The range and quantities of materials of animal origin in medical devices vary. These materials may comprise a major part of the device (e.g. bovine/porcine heart valves, catgut sutures, haemostatic devices), a product coating or impregnation (e.g. heparin, gelatin, collagen), or aid the manufacturing stages of production (e.g. tallow).

It is important to be aware that the exposure to a properly validated and accurately controlled method of inactivation is not the only factor associated with demonstrating product safety. Attention has also to be given to a number of factors including sourcing, collecting, handling, storage, processing, testing of tissues and/or cells of animal origin, and to the control of the environment in which the product is manufactured, assembled and packaged. The manufacturer should consider the fact that each manufacturing phase can contribute to

contamination as well as elimination and/or inactivation of viruses and transmissible agents.

For the safety of medical devices there are two complementary approaches (see EN 12442-1) that can be adopted to control the potential contamination of tissues. These typically are:

- a) selecting source material for minimal contamination with agents (see EN 12442-1 and EN12442-2);
- b) testing the ability of the production processes to remove or inactivate agents (this standard, EN 12442-3).

Requirements for the quality system for the design, production, installation and servicing are given in the EN ISO 9000 and EN 46000 series of standards. These standards refer to certain manufacturing processes as 'special' if the results cannot be fully verified by subsequent inspection and testing of the product. The elimination and/or inactivation of viruses and transmissible agents is an example of a special process because process efficacy cannot be verified by inspection and testing of the product. For this reason, the following need to be considered in particular:

- definition of the process(es) and materials to be used;
- adequate inactivation validation before routine use;
- performance monitoring of the process during manufacture;
- appropriate equipment maintenance;
- staff training, etc.

Since many instances of contamination in the past have occurred with viruses, whose presence was not known or even suspected at the time of manufacture, an evaluation of the process can provide a measure of confidence that a wide range of viruses including unknown, harmful viruses, may be eliminated. Similar principles may apply to transmissible agents.

NOTE: To show compliance with this standard, its specified requirements should be fulfilled. The guidance given in the NOTES and informative Annexes is not obligatory and is not provided as a checklist for auditors.

## **1 Scope**

**1.1** This Part of EN 12442 specifies requirements for the validation of elimination and/or inactivation of viruses and/or transmissible agents during the manufacture of medical devices (excluding in-vitro diagnostic medical devices) utilizing materials of animal origin. It is not applicable to bacteria, moulds and yeasts.

NOTE 1: Analysis and management of risk and conventional processes used for sterilization, when used for the treatment of animal tissues for medical devices, have not been shown to be completely effective in inactivating the causative agents of spongiform encephalopathies. Selective sourcing is extremely important (see EN 12442-1 and EN 12442-2).

NOTE 2: EN 550, EN 552, EN 554, ISO 14160 and EN 1174 may be relevant for bacteria, moulds and yeast (see Bibliography).

**1.2** This Part of EN 12442 does not cover the utilization of human tissues in medical devices.

**1.3** This Part of EN 12442 does not describe a quality assurance system for the control of all stages of manufacture.

NOTE: Attention is drawn to the standards for quality systems (e.g. EN ISO 9001 and EN 46001 or EN ISO 9002 and EN 46002, see Bibliography) which may be used to control all stages of manufacture. It is not a requirement of this standard to apply a complete quality system during manufacture but certain elements of such a system are required and these are addressed at appropriate places in the text.

**1.4** This Part of EN 12442 does not consider the effect of any method of elimination and/or inactivation on the suitability of the medical device for its intended use.

## **2 Normative references**

This European standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 12442-1 Animal tissues and their derivatives utilized in the manufacture of medical devices - Part 1: Analysis and management of risk

NOTE: The Bibliography lists informative references. These informative references are cited at the appropriate places in the text.

## **3 Terms and definitions**

For the purposes of this Standard, the following terms and definitions apply.

### **3.1**

#### **animal**

all vertebrates including fish, amphibians, reptiles, birds and mammals, excluding humans (*Homo sapiens*) [EN 12442-1 and EN 12442-2].

### **3.2**

#### **elimination/removal**

process by which the number of viruses and transmissible agents is reduced [EN 12442-1].

NOTE 1: The effectiveness of the process should be expressed mathematically in terms of a reduction factor (See Annex E).

NOTE 2: Elimination/removal aims to prevent infection or pathogenic reaction caused by viruses and/or transmissible agents.