

## **Infusion equipment for medical use - Part 2: Closures for infusion bottles**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

|  |  |
|--|--|
| Käesolev Eesti standard EVS-EN ISO 8536-2:2010 sisaldab Euroopa standardi EN ISO 8536-2:2010 ingliskeelset teksti.                         | This Estonian standard EVS-EN ISO 8536-2:2010 consists of the English text of the European standard EN ISO 8536-2:2010.  |
| Standard on kinnitatud Eesti Standardikeskuse 30.04.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.                | This standard is ratified with the order of Estonian Centre for Standardisation dated 30.04.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation. |
| Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kätesaadavaks tegemise kuupäev on 15.03.2010. | Date of Availability of the European standard text 15.03.2010.   |
| Standard on kätesaadav Eesti standardiorganisatsionist.  | The standard is available from Estonian standardisation organisation.  |

ICS 11.040.20

### Standardite reproduutseerimis- ja levitamisõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:  
Aru 10 Tallinn 10317 Estonia; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

### Right to reproduce and distribute Estonian 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 permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:  
Aru str 10 Tallinn 10317 Estonia; [www.evs.ee](http://www.evs.ee); Phone: +372 605 5050; E-mail: [info@evs.ee](mailto:info@evs.ee)

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN ISO 8536-2

March 2010

ICS 11.040.20

Supersedes EN ISO 8536-2:2002

English Version

Infusion equipment for medical use - Part 2: Closures for  
infusion bottles (ISO 8536-2:2010)

Matériel de perfusion à usage médical - Partie 2: Bouchons  
pour flacons de perfusion (ISO 8536-2:2010)

Infusionsgeräte zur medizinischen Verwendung - Teil 2:  
Stopfen für Infusionsflaschen (ISO 8536-2:2010)

This European Standard was approved by CEN on 18 February 2010.

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 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 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

## Foreword

This document (EN ISO 8536-2:2010) has been prepared by Technical Committee ISO/TC 76 "Transfusion, infusion and injection equipment for medical and pharmaceutical use".

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 September 2010, and conflicting national standards shall be withdrawn at the latest by September 2010.

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 8536-2:2002.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

### Endorsement notice

The text of ISO 8536-2:2010 has been approved by CEN as a EN ISO 8536-2:2010 without any modification.

## Contents

|   | Page      |
|---|-----------|
| <b>Foreword .....</b>   | <b>iv</b> |
| <b>Introduction.....</b>  | <b>v</b>  |
| 1 <b>Scope.....</b>   | <b>1</b>  |
| 2 <b>Normative references.....</b>  | <b>1</b>  |
| 3 <b>Shape and dimensions .....</b>                                       | <b>1</b>  |
| 4 <b>Designation .....</b>  | <b>3</b>  |
| 5 <b>Material .....</b>   | <b>3</b>  |
| 6 <b>Requirements.....</b>  | <b>3</b>  |
| 6.1 <b>General .....</b>  | <b>3</b>  |
| 6.2 <b>Physical requirements .....</b>                                    | <b>3</b>  |
| 6.3 <b>Chemical requirements.....</b>                                     | <b>4</b>  |
| 6.4 <b>Biological requirements.....</b>                                   | <b>4</b>  |
| 7 <b>Labelling.....</b>   | <b>4</b>  |
| <b>Annex A (normative) Determination of fragments.....</b>                | <b>5</b>  |
| <b>Annex B (normative) Determination of spike penetration force .....</b> | <b>7</b>  |
| <b>Annex C (normative) Spike retention/sealability.....</b>               | <b>9</b>  |
| <b>Annex D (normative) Closure piercing device .....</b>                  | <b>10</b> |
| <b>Bibliography.....</b>  | <b>11</b> |

## Introduction

The purpose of this part of ISO 8536 is to specify the shape and dimensions of and the requirements for elastomeric closures intended for infusion bottles. In order to provide seal integrity of the container closure systems the dimensions of the elastomeric closures have to be compatible with the dimensions of the infusion bottles and the caps as specified in corresponding parts of ISO 8536.

Primary packaging components made of elastomeric materials are an integral part of medicinal products and thus the principles of current Good Manufacturing Practice (cGMP) apply to the manufacturing of these components.

Principles of cGMP are described in, e.g. ISO 15378 or GMP Guidelines as published by the European Community and the United States of America.

# Infusion equipment for medical use —

## Part 2: Closures for infusion bottles

### 1 Scope

This part of ISO 8536 specifies the shape, dimensions, material, performance requirements and labelling of closures for infusion bottles as specified in ISO 8536-1.

The dimensional requirements are not applicable to barrier-coated closures.

Closures specified in this part of ISO 8536 are intended for single use only.

**NOTE** The potency, purity, stability and safety of a medicinal product during its manufacture and storage can strongly be affected by the nature and performance of the primary packaging.

### 2 Normative references

The following referenced documents are indispensable for the application 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 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 3302-1, *Rubber — Tolerances for products — Part 1: Dimensional tolerances*

ISO 3302-2, *Rubber — Tolerances for products — Part 2: Geometrical tolerances*

ISO 7619-1, *Rubber, vulcanized or thermoplastic — Determination of indentation hardness — Part 1: Durometer method (Shore hardness)*

ISO 8536-1, *Infusion equipment for medical use — Part 1: Infusion glass bottles*

ISO 8536-3, *Infusion equipment for medical use — Part 3: Aluminium caps for infusion bottles*

ISO 8871-1, *Elastomeric parts for parenterals and for devices for pharmaceutical use — Part 1: Extractables in aqueous autoclavates*

ISO 8871-4, *Elastomeric parts for parenterals and for devices for pharmaceutical use — Part 4: Biological requirements and test methods*

### 3 Shape and dimensions

**3.1** The shape and dimensions of closures shall be as shown in Figure 1 and as given in Table 1. Figure 1 illustrates two typical designs of closure, types A and B.