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Behållare för injektionsvätskor – Del 5: Frystorkningsproppar till injektionsflaskor (ISO 8362-5:2016)

Injection containers and accessories – Part 5: Freeze drying closures for injection vials (ISO 8362-5:2016)

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The European Standard EN ISO 8362-5:2016 has the status of a Swedish Standard. This document contains the official English version of EN ISO 8362-5:2016.

**Förhållandet till övriga delar under samma huvudtitel - Utdrag ur Förord i ISO 8362-5:2016/
Relations to other parts under the same general title - Extract from the Foreword of ISO 8362-5:2016**

ISO 8362 consists of the following parts, under the general title *Injection containers and accessories*:

- Part 1: *Injection vials made of glass tubing*
- Part 2: *Closures for injection vials*
- Part 3: *Aluminium caps for injection vials*
- Part 4: *Injection vials made of moulded glass*
- Part 5: *Freeze drying closures for injection vials*
- Part 6: *Caps made of aluminium-plastics combinations for injection vials*
- Part 7: *Injection caps made of aluminium-plastics combinations without overlapping plastics part*

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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 - där hittar du mer information.

EUROPEAN STANDARD

EN ISO 8362-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 11.040.20

English Version

Injection containers and accessories - Part 5: Freeze drying closures for injection vials (ISO 8362-5:2016)

Réipients et accessoires pour produits injectables -
Partie 5: Bouchons à lyophilisation pour flacons
d'injection (ISO 8362-5:2016)

Injektionsbehältnisse und Zubehör - Teil 5:
Gefriertrocknungsstopfen für Injektionsflaschen (ISO
8362-5:2016)

This European Standard was approved by CEN on 2 January 2016.

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European foreword

This document (EN ISO 8362-5:2016) has been prepared by Technical Committee ISO/TC 76 "Transfusion, infusion and injection, and blood processing equipment for medical and pharmaceutical use" in collaboration with Technical Committee CEN/TC 205 "Non-active medical devices" 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 September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

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Endorsement notice

The text of ISO 8362-5:2016 has been approved by CEN as EN ISO 8362-5:2016 without any modification.

Introduction

Freeze drying closures are put on the top of a glass container after filling, leaving sufficient openings for the sublimation process and vacuum. At the end of the drying process, they are fully inserted into the glass container by hydraulic or mechanical means in the vacuum chamber.

Freeze drying closures can pick up water during shipping, storage, washing and steam sterilization cycles, which is difficult to remove in a subsequent drying cycle. As a consequence, the freeze drying closures are usually loaded with residual moisture. Depending upon the mass of the freeze-dried product and the degree of its sensitivity to water, the residual moisture in the rubber material can spoil the freeze-dried preparation during storage.

These specific process requirements have been addressed in this part of ISO 8362 by specifying relevant requirements for freeze drying closures, including a test method for determining residual moisture.

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

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

Injection containers and accessories —

Part 5: Freeze drying closures for injection vials

1 Scope

This part of ISO 8362 specifies the shape, dimensions, material, performance requirements and labelling for the type of closure for injection vials, as described in ISO 8362-1 and ISO 8362-4, which is used in connection with the freeze drying (or lyophilization) of drugs and biological materials.

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

Closures specified in this part of ISO 8362 are intended for single use only.

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

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 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*

ISO 8871-5:2005, *Elastomeric parts for parenterals and for devices for pharmaceutical use — Part 5: Functional requirements and testing*

3 Terms and definitions

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

3.1

freeze drying

lyophilization

drying process designed to remove solvents from both aqueous and non-aqueous systems by sublimation and desorption

3.2 freeze drying closure

closure that enables the drying of a frozen pharmaceutical preparation in a vacuum chamber

4 Shape and dimensions

4.1 The dimensions of freeze drying closures shall be given in [Table 1](#) while [Figure 1](#) illustrates the general design of a freeze drying closure.

Table 1 — Dimensions of freeze drying closures

Dimensions in millimetres

Nominal size	d_1 ±0,2	d_2^a min.	h_2 ±0,25	h_3 min.	h_4 min.
13	12,5	7,5	2,0	2,0	1,8
20	18,8	13,0	3,3	2,0	2,0

^a The value of d_2 is applied in that area which is defined by h_3 .

4.2 If not otherwise specified, general dimensional tolerances shall be in accordance with ISO 3302-1 and ISO 3302-2.

4.3 If spacers are located on the top of the flange, they shall not interfere with the marks for the piercing area (see [Figure 1](#)). The height of the spacers shall not exceed 0,3 mm.

NOTE The spacers in [Figure 1](#) are shown for illustrative purposes only and do not form part of the requirements of this part of ISO 8362.

There may be marks or indentations on the top surface.

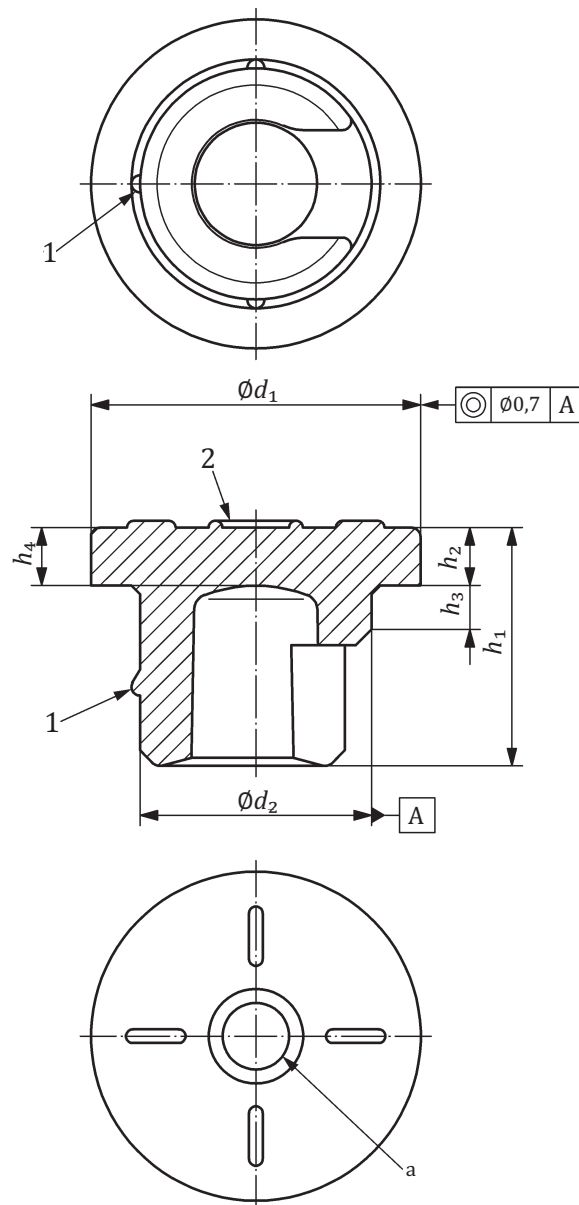
4.4 If the flange of the closure has a slightly conical shape, it shall be 0,3 mm maximum in relation to the diameter in order to facilitate production. The tolerances of the trimming edge of the flange shall comply with the tolerances specified in [Table 1](#) for diameter d_1 .

4.5 The plug part shall provide slits, channels or other appropriate means, in conjunction with protruding or positioning elements at the outer diameter, which enable insertion on a drying (halfway) position during the sublimation process.

4.6 The design of the positioning element to hold the freeze drying closure firmly in the sublimation position should not compromise the full insertion of the closure into the neck of the vial.

4.7 The design of the flange part in conjunction with the plug design shall permit both the reconstitution of the freeze-dried product with the appropriate solvent and the removal of the dissolved product by means of a piercing device.

Dimensions in millimetres



Key

- 1 positioning element
- 2 spacer
- a The inner diameter shall not be wider than the inner lumen.

NOTE The total height of the freeze drying closure, h_1 , can vary and is subject to mutual agreement between manufacturer and user.

Figure 1 — Example of a freeze drying closure design

4.8 The freeze drying closure shall be designed and manufactured in such a way that the removal of the reconstituted product with a hypodermic needle can be visually controlled in order to minimize the amount of residual product.