

INTERNATIONAL ISO
This is a preview of "ISO 13408-3:2006". Click here to purchase the full version from the ANSI store.

First edition
2006-09-15

Aseptic processing of health care products —

Part 3: Lyophilization

Traitement aseptique des produits de santé —

Partie 3: Lyophilisation



Reference number
ISO 13408-3:2006(E)

© ISO 2006

This is a preview of "ISO 13408-3:2006". [Click here to purchase the full version from the ANSI store.](#)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2006

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

This is a preview of "ISO 13408-3:2006". [Click here to purchase the full version from the ANSI store.](#)

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	1
4 Quality system elements.....	1
4.1 General.....	1
4.2 Management responsibility	2
4.3 Design control.....	2
4.4 Measuring instruments and/or measuring systems	2
5 Product definition	2
6 Process definitions.....	2
7 User requirements	3
7.1 General.....	3
7.2 Equipment characterization.....	3
7.3 Product handling	4
7.4 Microbiological and particulate environmental monitoring	4
7.5 Cleaning and sterilization	4
7.6 Vent filter system	5
7.7 Lyophilizer leak test.....	5
8 Validation	5
8.1 General.....	5
8.2 Design qualification.....	6
8.3 Installation qualification.....	6
8.4 Operational qualification.....	6
8.5 Performance qualification.....	8
8.6 Process validation	8
8.7 Review and approval of validation.....	9
9 Routine monitoring and control	9
9.1 General.....	9
9.2 Operator training.....	9
9.3 Standard operating procedures	9
9.4 Requalification	10
9.5 Maintenance of equipment	10
9.6 Change control.....	10
Bibliography	11

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 13408-3 was prepared by Technical Committee ISO/TC 198, *Sterilization of health care products*.

ISO 13408 consists of the following parts, under the general title *Aseptic processing of health care products*:

- *Part 1: General requirements*
- *Part 2: Filtration*
- *Part 3: Lyophilization*
- *Part 4: Clean-in-place technologies*
- *Part 5: Sterilization in place*
- *Part 6: Isolator systems*

This is a preview of "ISO 13408-3:2006". [Click here to purchase the full version from the ANSI store.](#)

Introduction

This part of ISO 13408 deals with lyophilization, which is a physical-chemical drying process designed to remove solvents from both aqueous and non-aqueous systems, primarily to achieve product or material stability. Lyophilization is synonymous to the term freeze-drying. Lyophilization involves freezing an aqueous system and removing the solvent, first by sublimation (primary drying) and then by desorption (secondary drying), to a level that no longer supports chemical reactions or biological growth. The result is a stable, well-formed product meant to rapidly disperse or solubilize while retaining biological or other activity. Because it is often the final step in an aseptic process with direct impact on the safety, quality, identity, potency and purity of a product, lyophilization is a critical processing step.

Where the finished lyophilized product is intended to be sterile, the product to be dried is an aqueous system that has already been sterilized. Therefore, all activities that can affect the sterility of the product or material need to be regarded as extensions of the aseptic processing of that sterilized product or material. In general, the predominant challenge in ensuring product or material sterility during lyophilization is to prevent microbiological and particulate contamination between the filling operation and completion of the lyophilization process. Of special, equipment-related concern is the protection of the product or material from microbiological contamination within the chamber.