



**International
Standard**

ISO 16671

**Ophthalmic implants — Irrigating
solutions for ophthalmic surgery**

*Implants ophtalmiques — Solutions d'irrigation pour la chirurgie
ophtalmique*

**Third edition
2025-06**

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 16671:2025

<https://standards.iteh.ai/catalog/standards/iso/3052db61-a449-450b-bba4-c1b040243315/iso-16671-2025>

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 16671:2025

<https://standards.iteh.ai/catalog/standards/iso/3052db61-a449-450b-bba4-c1b040243315/iso-16671-2025>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Intended performance	2
5 Design attributes	2
5.1 General	2
5.2 Chemical description and contaminants	3
5.3 Water used	3
5.4 Characterization of the finished product	3
5.4.1 General	3
5.4.2 pH and buffering capacity	3
5.4.3 Osmolality	4
5.4.4 Spectral transmittance	4
5.4.5 Particulates	4
6 Design evaluation	5
6.1 General	5
6.2 Evaluation of biological safety	5
6.2.1 General	5
6.2.2 Bacterial endotoxins test	5
6.2.3 Intraocular irritation and inflammation	5
6.3 Clinical evaluation	6
7 Sterilization	6
8 Product stability	6
9 Packaging	7
9.1 Protection from damage during storage and transport	7
9.2 Maintenance of sterility in transit and storage	7
10 Information supplied by the manufacturer	7
Annex A (informative) Example of a suitable method for pH measurement and buffer capacity determination	9
Annex B (normative) Particulate contamination: visible particulates	10
Annex C (normative) Light obscuration test method for particulate contamination: sub-visible particles	11
Annex D (normative) Microscopic test method for particulate contamination: sub-visible particles	13
Annex E (normative) Intraocular irrigation test	18
Annex F (normative) Clinical investigation	20
Annex G (informative) Analyses of OIS clinical data	22
Annex H (informative) Sample size calculation	24
Bibliography	26

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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.

This document was prepared by Technical Committee ISO/TC 172, *Optics and photonics*, Subcommittee SC 7, *Ophthalmic optics and instruments*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 170, *Ophthalmic optics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 16671:2015), which has been technically revised. It also incorporates the Amendment ISO 16671:2015/Amd.1:2017.

<https://standards.iteh.ai/catalog/standards/iso/3052db61-a449-450b-bba4-c1b040243315/iso-16671-2025>
The main changes are as follows:

- Inclusion of applicable sections from ISO 14630 throughout the document and removal of any reference to that standard. It was further clarified that ophthalmic irrigation solutions (OIS) are not implants by their intended use but are likely to share some of the risks related to non-active implants. Therefore, the following clauses and subclauses have been revised: [Clause 4](#), [Clause 5](#), [Clause 7](#) and [9.1](#);
- Clarifications of terms [3.1](#), [3.2](#), [3.3](#) and [3.4](#);
- Revision of [5.1](#) for a more accurate description of design attributes;
- Revision of [Clause 7](#) to clarify the risks associated with components of OIS sterilized by ethylene oxide (EO);
- Revision of [Clause 8](#) to clarify that the real time shelf-life testing shall be performed and the accelerated shelf-life testing is optional;
- Revision of [Annex E](#) to provide additional clarification regarding the number of test and control eyes enrolled in the study and that use of medication during the study that could possibly impact the study results;
- [Annex F](#) was changed from informative to normative and clarified that the same intraocular surgical procedure is performed in the test and control arms and changed the first post-operative intraocular pressure (IOP) measurement from 6 h ± 2 h to 8 h ± 2 h to capture the effect of irrigation solution on IOP and align it with ISO 15798:2022, F.2;

ISO 16671:2025(en)

- Inclusion of [Annex G](#);
- The example for patient number calculation is incorporated into [Annex H](#);
- Correction of [Formulae H.1](#) and [H.2](#).

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.

iTeh Standards (<https://standards.iteh.ai>) Document Preview

ISO 16671:2025

<https://standards.iteh.ai/catalog/standards/iso/3052db61-a449-450b-bba4-c1b040243315/iso-16671-2025>