

INTERNATIONAL STANDARD

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Optics and optical instruments — Contact lenses — Determination of refractive index of contact lens materials

*Optique et instruments d'optique — Lentilles de contact —
Détermination de l'indice de réfraction des matériaux des lentilles de
contact*



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Foreword

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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.

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Optics and optical instruments — Contact lenses — Determination of refractive index of contact lens materials

1 Scope

This International Standard specifies a test method for determining the refractive index of contact lens materials. The test method described is given as a reference method. Alternative methods may be used provided that repeatability and accuracy are at least equal to those specified herein for the refractive index of the specimen under test according to ISO 5725¹⁾.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7944:1984, *Optics and optical instruments — Reference wavelengths*.

ISO 8320:1986, *Optics and optical instruments — Contact lenses — Vocabulary and symbols*.

ISO 10344:—²⁾, *Optics and optical instruments — Contact lenses — Saline solution for contact lens testing*.

1) ISO 5725:1994, *Accuracy (trueness and precision) of measurement methods and results*.

2) To be published.

3 Definitions

For the purposes of this International Standard the definitions given in ISO 8320 and the following definition apply.

3.1 refractive index (of a contact lens material): Ratio of the sine of the angle of incidence to the sine of the angle of refraction when a ray of light of defined wavelength passes from air into the contact lens material maintained at a constant temperature.

4 Principle

The refractive index is determined by measuring the angle at which total internal reflection occurs when light passes from the prism surface of the refractometer into the contact lens material. It is necessary to use a contacting fluid between the contact lens material and the refractometer prism for all materials except hydrogels.

5 Apparatus

5.1 Abbe refractometer, or refractometer of similar design, calibrated using one of the reference wavelengths specified in ISO 7944 and having a precision of at least $\pm 0,000\ 5$.

A refractometer calibrated for a wavelength other than the reference wavelength may be used only if an accurate conversion to the desired wavelength is available.

Refractometers designed to measure the solids content of sugar solutions may be used only if an accu-