INTERNATIONAL STANDARD

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Microscopes — Immersion liquids for light microscopy

Microscopes — Liquides d'immersion pour microscopie optique

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Contents

Page

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 documents 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).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 172, *Optics and photonics*, SC 5, *Microscopes and endoscopes*.

This second edition cancels and replaces the first edition (ISO 8036:2006), where in Clause 6, the outdated reference to the EU Directive 91/155/EEC and its Amendments 93/112/EC and 01/58/EC were removed.

Microscopes — Immersion liquids for light microscopy

1 Scope

This International Standard describes the characteristics of immersion liquids used in microscopy. It classifies immersion liquids according to their field of application and specifies requirements and test methods for each type.

This International Standard further specifies a system of designation for immersion liquids, the information to be included on container labels, and the information to be supplied in technical data sheets.

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 2592, *Determination of flash and fire points — Cleveland open cup method*

ISO 8255-1, *Microscopes — Cover glasses — Part 1: Dimensional tolerances, thickness and optical properties*

ISO 8255-2, *Microscopes — Cover glasses — Part 2: Quality of materials, standards of finish and mode of packaging*

3 Classification

Depending on their field of application, immersion liquids are classified as follows:

— type N: immersion oil for general use in light microscopy;

— type F: immersion oil which meets the requirements of fluorescence microscopy;

— type G: spectrally pure glycerol (commonly known as glycerine) for glycerol immersion.

4 Characteristics of immersion liquids

4.1 Optical properties

The optical properties of immersion liquids are defined by the refractive index at the wavelength λ = 546,07 nm, n_e, at a defined temperature (23 °C) and pressure (1 013,25 hPa), as well as by the Abbe number (reciprocal of the dispersive power), v_e.

The Abbe number, v_e, is calculated using Formula (1):

$$v_e = \frac{n_e - 1}{n_{F'} - n_{C'}} \quad (1)$$

where

$n_{F'}$ is the refractive index at λ = 479,99 nm;

$n_{C'}$ is the refractive index at λ = 643,85 nm.