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Laboratory plastic ware — Volumetric flasks

Matériel en plastique de laboratoire — Fioles jaugées

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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

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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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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 48, *Laboratory equipment*.

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.

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Introduction

Volumetric flasks together with analytical balances are the fundamental tools for the preparation of volumetric standard solutions – the basis of chemical analysis. The design of class A volumetric flasks has been optimized to achieve the fewest possible acceptable errors.

Class A volumetric flasks are used for the production of standard solutions and where necessary, a suitable quantity is poured into an intermediate vessel into which a pipette tip may be introduced.

In accordance with good laboratory practice, only class A volumetric flasks conforming to this document should be used for precise analytical purposes.

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Laboratory plastic ware — Volumetric flasks

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1 Scope

This document sets out requirements for the construction of general laboratory volumetric flasks made of plastic material.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC Guide 99, *International vocabulary of metrology — Basic and general concepts and associated terms (VIM)*

ISO 383, *Laboratory glassware — Interchangeable conical ground joints*

ISO 384:2015, *Laboratory glass and plastics ware — Principles of design and construction of volumetric instruments*

ISO 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*

ISO 4787, *Laboratory glass and plastic ware — Volumetric instruments — Methods for testing of capacity and for use*

DIN 168-1, *Knuckle threads — Part 1: Especially for glass containers; thread sizes*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC Guide 99 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Volume and reference temperature

4.1 Unit of volume

The unit of volume shall be the millilitre (ml), which is equivalent to the cubic centimetre (cm^3).

4.2 Reference temperature

The standard reference temperature, i.e. the temperature at which the volumetric flask is intended to contain or deliver its volume (capacity), shall be 20 °C.

When the volumetric flask is required for use in a country which has adopted a standard reference temperature of 27 °C, this value shall be substituted for 20 °C.

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