Australian Standard™

Laboratory glassware—One-mark volumetric flasks

Standards Australia

This Australian Standard was prepared by Committee CH-001, Laboratory Glassware and Related Apparatus. It was approved on behalf of the Council of Standards Australia on 29 November 2002 and published on 14 February 2003.

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Laboratory glassware—One-mark volumetric flasks

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PREFACE

This Standard was prepared by the Standards Australia Committee CH-001, Laboratory Glassware and Related Apparatus to supersede AS 2164—1995, *Laboratory glassware—One-mark volumetric flasks*. This edition is based on ISO 1042:1998, *Laboratory glassware—One-mark volumetric flasks.* This Standard differs from ISO 1042 in that it refers to AS 2162 for information on verification and use, and requires markings appropriate to the type of glass used.

The objective of this Standard is to provide a specification for one-mark volumetric flasks required for general use in laboratories

This Standard varies from the previous edition in that the dimensions of the complete range of flasks now conform with those of ISO 1042:1998. This edition includes the addition of flasks with capacities of 1, 2, 20 and 5000 mL. It also includes flasks with conical body shape and flasks with a wider neck.

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FOREWORD

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 narrow-necked class A volumetric flasks has been optimized to achieve the fewest possible permitted errors.

With the increasing popularity of piston-operated pipettors, there is market pressure for the manufacture of volumetric flasks with wider necks so that pipettor tips may be inserted to remove solution directly. Wide-necked flasks will of necessity be of lower accuracy than the corresponding capacities of narrow-necked flasks and the insertion of any extraneous device may introduce other errors.

It is therefore recommended that narrow-necked class A volumetric flasks are used for the production of standard solutions and where necessary, a suitable quantity should be poured into an intermediate vessel into which the pipettor tip may be introduced.

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

STANDARDS AUSTRALIA

Australian Standard
Laboratory glassware—One-mark volumetric flasks

1 SCOPE

This Standard specifies requirements for a series of one-mark volumetric flasks, suitable for general laboratory purposes. Two Classes of accuracy are specified, Class A volumetric flasks being of higher accuracy than Class B volumetric flasks.

NOTE: The method of verification and notes for the use of one-mark volumetric flasks are given in AS 2162.1.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS	
2162	Verification and use of volumetric apparatus
2162.1	Part 1: General—Volumetric glassware
2409	Interchangeable conical ground glass joints

3 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

3.1 Capacity

The volume of water at 20°C, expressed in millilitres, contained by the flask at 20°C when filled to the graduation line.

3.2 Neck

That part of the flask which is of apparently uniform internal diameter.

3.3 Reference temperature

The Standard temperature of 20°C at which the volumetric flask is intended to contain its nominal volume (nominal capacity).

3.4 Unit of volume

The term millilitre (mL) is in accordance with the International System of Units (SI).

4 CLASSES OF ACCURACY

Two classes of accuracy are specified—

(a) Class A for the higher grade; and

(b) Class B for the lower grade.

5 SERIES OF CAPACITIES

The series of capacities of one-mark volumetric flasks are as follows:

1, 2, 5, 10, 20, 25, 50, 100, 200, 250, 500, 1000, 2000 and 5000 mL

All these flasks may be finished with a plain neck or be provided with a stopper.

NOTE: If volumetric flasks of capacities other than those listed above are required, it is recommended that they conform, as far as possible, to the essential requirements of this Standard.