AS 2409—2005

Australian Standard™

Laboratory glassware—Interchangeable conical ground glass joints

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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 14 October 2005.
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Laboratory glassware—Interchangeable conical ground glass joints

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PREFACE

This Standard was prepared by the Standards Australia Committee CH-001, Laboratory Glassware and Related Apparatus to supersede AS 2409—1981, *Laboratory glassware—Interchangeable conical ground glass joints.* It is based on, but not equivalent to, ISO 383, *Laboratory glassware—Interchangeable conical ground joints*, which lists the series of joints already widely used.

The objective of this Standard is to ensure interchangeability between standard conical ground glass joints, irrespective of where they are manufactured. In order to achieve interchangeability, it is necessary that each of the following requirements be adequately specified, including appropriate tolerances:

(a) Taper.

(b) Large end diameter.

(c) Length of tapered zone.

(d) Surface finish.

From the practical point of view, and especially because of the difficulty of carrying out precise measurements on the tapered portions of the finished joints, it is desirable to apply a gauging system which allows rapid checking of the essential dimensions. The definition of these dimensions in Clause 5 is an integral part of this Standard, but the system of gauging described in Appendix A, although it has been proved in practice as fully satisfactory, is not the only one which can be applied for the purpose.

The objective of this revision is to reconfirm the Standard with minor changes including the following:

(i) Referenced documents have been updated.

(ii) The Standard has been brought into line with current editorial practices.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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1 SCOPE

This Standard specifies the essential geometric requirements for interchangeability in relation to four series of conical ground glass joints (viz. k2, k4, k6, k8) with ground surfaces for incorporation in laboratory glassware. The k6 series is preferred.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS

1349 Bourdon tube pressure and vacuum gauges

HB 47 Dimensioning and tolerancing to AS 1100.101—1992 and AS 1100.201—1992

3 TAPER

The taper of the joints shall be such as to give one increment of diameter for ten increments on axial length, with a tolerance of ±0.006 on the diameter increment, i.e. a taper of

$$\frac{1.00 \pm 0.006}{10}$$

NOTE: Manufacturing techniques normally result in components in which the departures from nominal size are considerably less than the tolerance specified. However owing to the lack of sufficient experimental evidence, it is not possible to reduce the specified tolerance.

4 LARGE END DIAMETERS

The following series of nominal large end diameters of the joints, in millimetres, shall be adopted:

5, 7.5, 10, 12.5, 14.5, 18.8, 21.5, 24, 29.2, 34.5, 40, 45, 50, 55, 60, 71, 85, 100.

5 CLASSIFICATION OF JOINTS AND LENGTH OF TAPERED ZONE

The four series of joints listed in Table 1 are classified according to the value of the constant k which may be 2, 4, 6 or 8.

The length of the tapered zone of the joint is then calculated from the following equation:

$$l = kd^{1/2}$$

where

l = length of tapered zone, in millimetres

k = a constant

d = large end diameter, in millimetres

The calculated length shall be rounded off to the nearest whole number.

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