
Laboratory glassware — Wide-necked boiling flasks

The European Standard EN ISO 24450:2005 has the status of a
British Standard

ICS 71.040.20

National foreword

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The UK participation in its preparation was entrusted by Technical Committee LBI/36, Laboratory glassware and related accessories, to Subcommittee LBI/36/1, General and volumetric glass, which has the responsibility to:

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Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii to iv, pages 1 to 4, an inside back cover and a back cover.

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English Version

Laboratory glassware - Wide-necked boiling flasks (ISO
24450:2005)

Verrerie de laboratoire - Fioles coniques et ballons à col
large (ISO 24450:2005)

Laborgeräte aus Glas - Erlenmeyer-, Rund- und
Stehkolben, weithalsig (ISO 24450:2005)

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Foreword

This document (EN ISO 24450:2005) has been prepared by Technical Committee ISO/TC 48 "Laboratory glassware and related apparatus" in collaboration with Technical Committee CEN/TC 332 "Laboratory equipment", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

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The text of ISO 24450:2005 has been approved by CEN as EN ISO 24450:2005 without any modifications.

INTERNATIONAL
STANDARD

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24450

First edition
2005-11-01

**Laboratory glassware — Wide-necked
boiling flasks**

Verrerie de laboratoire — Fioles coniques et ballons à col large



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Foreword

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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.

ISO 24450 was prepared by Technical Committee ISO/TC 48, *Laboratory glassware and related apparatus*, Subcommittee SC 6, *Laboratory and volumetric ware*.

Laboratory glassware — Wide-necked boiling flasks

1 Scope

This International Standard specifies requirements and dimensions for an internationally acceptable series of conical flasks and of flat-bottom and round-bottom flasks with wide neck for general laboratory purpose. The flasks are provided for

- direct use in laboratory, fitting together with other equipment for general laboratory purposes;
- further work up to other products.

NOTE For narrow-necked boiling flasks, ISO 1773 applies. For boiling flasks with conical ground joints, see ISO 4797.

2 Normative references

The following referenced documents are indispensable for the application 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 3585, *Borosilicate glass 3.3 — Properties*

3 Series and capacities

3.1 Series of nominal capacity

The series of nominal capacities of wide-necked conical flasks is as follows (given in millilitres):

50 — 100 — 250 — 500 — 1 000

The series of nominal capacities of wide-necked round-bottom flasks is as follows (given in millilitres):

50 — 100 — 250 — 500 — 1 000 — 2 000 — 4 000 — 6 000 — 10 000

The series of nominal capacities of wide-necked flat-bottom flasks is as follows (given in millilitres):

50 — 100 — 250 — 500 — 1 000 — 2 000

3.2 Nominal capacity

The nominal capacity of a flask is the value, selected from the series given in 3.1, which is closest to but not larger than the actual volume to the base of neck.

NOTE The body dimensions recommended in Tables 1 and 2 take this requirement into account.

4 Material

Flasks shall be made from borosilicate glass 3.3 in accordance with ISO 3585, and shall be free from visible defects which might affect performance, and free from any internal stress which would impair the performance of the flask.

5 Construction and dimensions

5.1 Construction

5.1.1 Stability

Conical flasks and flat-bottom flasks shall stand vertically without rocking or spinning when placed on a level surface.

5.1.2 Neck

The neck of the flask shall be substantially circular in cross-section and the mouth of the neck shall not be belled to any considerable distance from the top. The top of the neck shall be suitably strengthened.

5.2 Dimensions

5.2.1 Recommended dimensions

Dimensions for wide-necked conical flasks are given in Table 1.

Table 1 — Dimensions of wide-necked conical flasks

Dimensions in millimetres

Nominal volume	External diameter of body at widest point	External diameter of neck	Overall height	Wall thickness	
				min.	max.
ml					
50	51 ± 1	$34 \pm 1,5$	85 ± 3	0,8	2,5
100	$64 \pm 1,5$	$34 \pm 1,5$	105 ± 3	0,8	2,5
250	85 ± 2	50 ± 2	140 ± 3	0,9	3,3
500	105 ± 2	50 ± 2	175 ± 4	0,9	3,3
1 000	131 ± 3	50 ± 2	220 ± 4	1,3	3,6

Dimensions of wide-necked flat-bottom and round-bottom flasks are given in Table 2.

Table 2 — Dimensions of wide-necked flat- and round-bottom flasks

Dimensions in millimetres

Nominal volume ml	External diameter of body at widest point	External diameter of neck	Overall height		Wall thickness	
			flat bottom	round bottom	min.	max.
50	51 ± 1	34 ± 1,5	90 ± 2	95 ± 2	0,8	2,5
100	64 ± 1,5	34 ± 1,5	105 ± 2	110 ± 2	0,8	2,5
250	85 ± 2	50 ± 2	138 ± 2	143 ± 2	0,9	3,3
500	105 ± 2	50 ± 2	163 ± 2	168 ± 2	0,9	3,3
1 000	131 ± 3	50 ± 2	190 ± 3	200 ± 3	1,3	3,6
2 000	166 ± 3	76 ± 2	230 ± 3	240 ± 3	1,5	4,0
4 000	207 ± 3	76 ± 2	—	290 ± 3	1,8	5,0
6 000	236 ± 3	89 ± 3	—	330 ± 3	1,8	5,5
10 000	279 ± 4	89 ± 3	—	380 ± 4	2,0	5,5

5.2.2 Neck length

The length of the neck of conical flasks shall be 1 to 1,25 times the external diameter of the neck.

5.2.3 Dimensions of base

The radius at the junction between the base and the side of conical flasks shall be between 15 % and 20 % of the maximum external diameter.

The diameter of the base of flat-bottom flasks shall be approximately 50 % of the maximum external diameter.

5.2.4 Wall thickness

Values for the wall thickness are given in Tables 1 and 2. Substantial local irregularities shall be avoided. Manufacturers shall take care that minimum wall thicknesses are compatible with safety requirements.

5.3 Graduation

Wide-necked conical flasks may be provided with a scale approximately indicating the volume of liquid contained.

6 Marking

The following inscriptions shall be permanently and legibly marked on all conical, flat-bottom and round-bottom flasks:

- the nominal volume of the flask, e.g. "100 ml";
- the maker's and/or vendor's name and/or mark;
- each flask shall also bear an area with a surface suitable for marking with a pencil.

It is recommended that reference is made on each flask to this International Standard, e.g. by the inscription "ISO 24450".

Bibliography

- [1] ISO 1773, *Laboratory glassware — Narrow-necked boiling flasks*
- [2] ISO 4797, *Laboratory glassware — Boiling flasks with conical ground joints*

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