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Containers and accessories for pharmaceutical preparations —

Part 3:

Screw-neck bottles (veral) for solid and liquid
dosage forms

Réipients et accessoires pour préparations pharmaceutiques —

Partie 3: Flacons bague à vis (veral) pour formes sèches et liquides



Reference number
ISO 11418-3:1996(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11418-3 was prepared by Technical Committee ISO/TC 76, *Transfusion, infusion and injection equipment for medical use*.

ISO 11418 consists of the following parts, under the general title *Containers and accessories for pharmaceutical preparations*:

- Part 1: *Drop-dispensing bottles*
- Part 2: *Screw-neck bottles for syrups*
- Part 3: *Screw-neck bottles (vial) for solid and liquid dosage forms*
- Part 4: *Tablet bottles*
- Part 5: *Dropper assemblies*

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Containers and accessories for pharmaceutical preparations —

Part 3:

Screw-neck bottles (veral) for solid and liquid dosage forms

1 Scope

The purpose of this part of ISO 11418 is to specify the design, dimensions, material and requirements of screw-neck bottles (veral)¹⁾ for pharmaceutical preparations in solid and liquid dosage forms. Screw-neck bottles are applicable to primary packs used in direct contact with a drug.

This part of ISO 11418 applies to screw-neck bottles (veral) used in pharmacy. Together with the corresponding closure systems, they serve for packaging of pharmaceutical preparations in solid and liquid dosage forms which are not intended for parenteral use.

NOTE 1 The potency, purity, stability and safety of a drug during its manufacture and storage can be strongly affected by the nature and performance of the primary pack.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 11418. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 11418 are encouraged to investigate the possibility of applying the most recent edi-

tions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 719:1985, *Glass — Hydrolytic resistance of glass grains at 98 °C — Method of test and classification.*

ISO 720:1985, *Glass — Hydrolytic resistance of glass grains at 121 °C — Method of test and classification.*

ISO 1101:—²⁾, *Technical drawings — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*

ISO 4802-1:1988, *Glassware — Hydrolytic resistance of the interior surfaces of glass containers — Part 1: Determination by titration method and classification.*

ISO 4802-2:1988, *Glassware — Hydrolytic resistance of the interior surfaces of glass containers — Part 2: Determination by flame spectrometry and classification.*

ISO 7459:1984, *Glass containers — Thermal shock resistance and thermal shock endurance — Test methods.*

ISO 8113:1985, *Glass containers — Resistance to vertical load — Test method.*

1) Abbreviation of the French term "verre allégé".

2) To be published. (Revision of ISO 1101:1983)

3 Dimensions and designation

3.1 Dimensions

The dimensions of screw-neck bottles (veral) for pharmaceutical preparations in solid and liquid dosage forms shall be as shown in figure 1 and as given in table 1.

Tolerancing of form, orientation, location and run-out not specified in this part of ISO 11418 shall be in accordance with ISO 1101.

3.2 Designation

EXAMPLE

A screw-neck bottle (veral) with a 28 mm pilferproof finish of nominal volume 100 ml, made of amber glass (br) of hydrolytic resistance container class ISO 4802 - HC 3, in accordance with this part of ISO 11418 is designated as follows:

Screw-neck bottle ISO 11418-2 - 100 - br

4 Requirements

4.1 Material

The material shall be colourless (cl) or amber (br) borosilicate glass³⁾ or soda-lime-silica glass³⁾ of hydrolytic resistance grain class ISO 719 - HGB 3 or ISO 720 - HGA 2.

4.2 Performance

4.2.1 Vertical load resistance

The resistance to vertical load shall be in accordance with ISO 8113.

4.2.2 Hydrolytic resistance

When tested in accordance with ISO 4802-1 or ISO 4802-2, the hydrolytic resistance of the internal surface of the screw-neck bottle shall comply with the requirements of hydrolytic resistance container class ISO 4802 - HC 3.

4.2.3 Thermal shock resistance

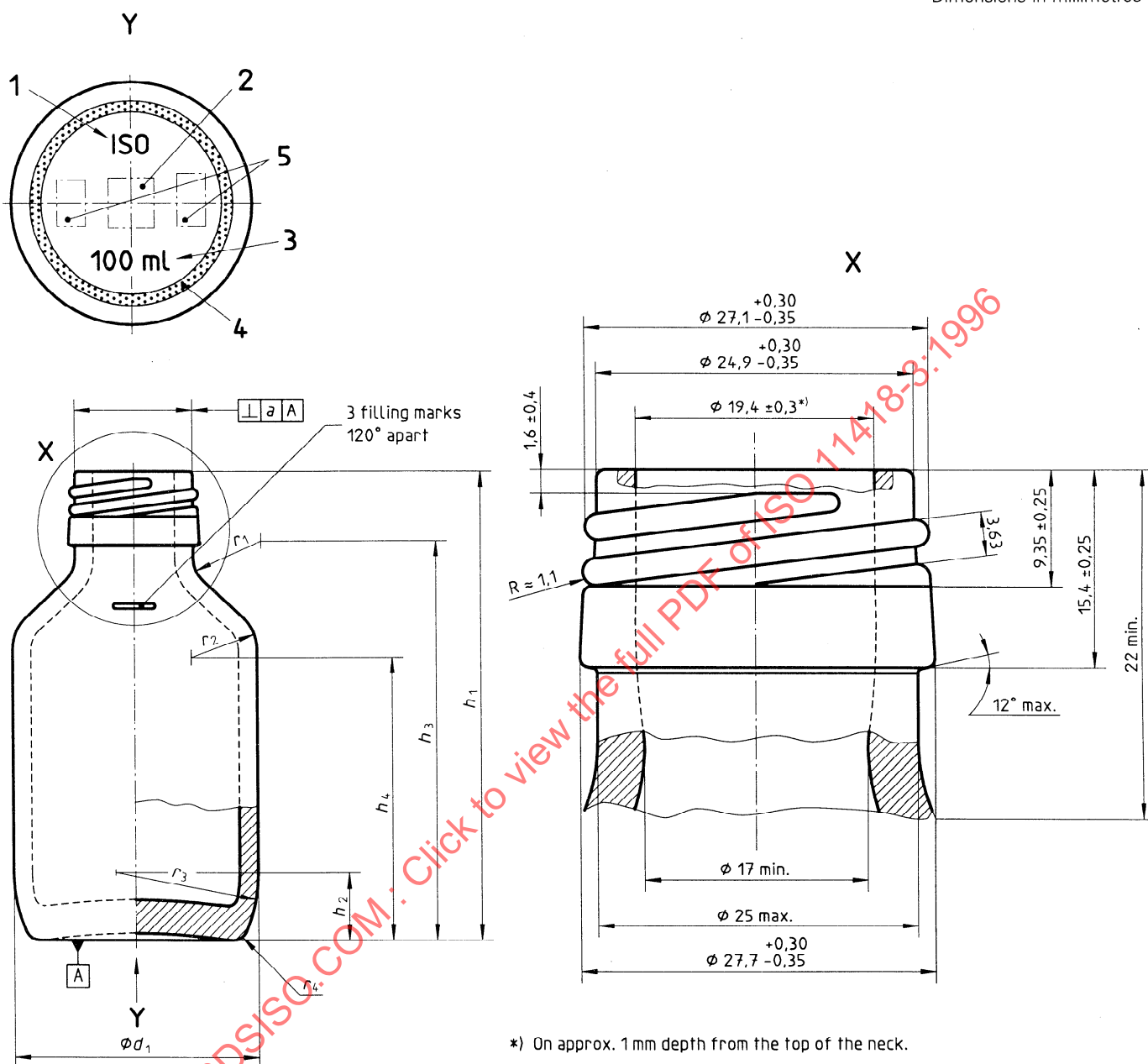
Screw-neck bottles (veral) shall withstand the thermal shock of a temperature difference of 42 °C when tested in accordance with the thermal shock resistance test specified in ISO 7459.

5 Marking

The screw-neck bottle (veral) shall be marked with the information specified in figure 1 (view Y).

3) For definition, see ISO 4802-1 or ISO 4802-2.

Dimensions in millimetres



1) The number of the mould may be placed on the curve r_3 , on the bottom or on the shoulder of the bottle.

Figure 1 — Typical screw-neck bottle (veral) with a 28 mm pilferproof neck finish, showing marking locations

Table 1 — Nominal volume, overflow capacity and dimensions of screw-neck bottles (veral) for solid and liquid dosage forms

Dimensions in millimetres

Nominal volume ml	Overflow (brimful) capacity ml	<i>a</i>	<i>d</i> ₁ tol.	<i>h</i> ₁ tol.	<i>h</i> ₂ approx.	<i>h</i> ₃ approx.	<i>h</i> ₄ approx.	<i>r</i> ₁ approx.	<i>r</i> ₂ approx.	<i>r</i> ₃ approx.	<i>r</i> ₄ approx.	Mass g approx.
50	62 ± 1,5	1,1	40,8 ± 0,8	83 ± 0,7	12	64,6	50,6	6	8	25	2,5	59
75	88 ± 2,2	1,2	47,4 ± 0,8	91,4 ± 0,8	13	73	56,5	6	9	28	2,8	86
100	118 ± 2,7	1,3	51,6 ± 0,8	98 ± 0,8	14	79,6	60,6	6	9,5	30	3	95
125	148 ± 3,2	1,3	57 ± 0,9	98 ± 0,8	15	79,6	58,6	6	10	35	3,2	103
150	173 ± 3,6	1,4	57 ± 0,9	110,4 ± 0,8	15	92	71	6	10	35	3,2	110
200	226 ± 4,4	1,6	64 ± 1	116 ± 0,9	17	97,6	71,6	6	14	38	3,5	140
250	283 ± 5,2	1,7	64 ± 1	137,5 ± 0,9	17	119,1	93,1	6	14	38	3,5	168
500	555 ± 8,1	2,1	82,6 ± 1,3	161,8 ± 1	22	143,4	105	8	18	40	4	270
1 000	1 090 ± 11	2,7	100,6 ± 1,6	206,2 ± 1,2	24	187,5	140	10	21	45	5	485