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Cylindrical cork stoppers — Physical tests —

Part 8: Determination of capillarity

Bouchons cylindriques en liège — Essais physiques —

Partie 8: Détermination de la capillarité

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Foreword

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This document was prepared by Technical Committee ISO/TC 87, *Cork*.

A list of all parts in the ISO 9727 series can be found on the ISO website.

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Cylindrical cork stoppers — Physical tests —

Part 8: Determination of capillarity

1 Scope

This document specifies the test method to determine the capillarity of cylindrical cork stoppers. It consists in measuring the capillary rise by dipping in a hydro-alcoholic solution containing a dye. Two methods using the same procedure but different concentrations of hydro-alcoholic solutions are described.

It is applicable to all types of cylindrical cork stoppers, ready for use.

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 633, *Cork — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 633 apply.

4 Products reagents

4.1 Reference method

Ethanolic solution at 12 % vol., (or more concentrated up to the volumetric % of the beverage to be packaged) prepared with demineralised water and coloured (methylene blue or other suitable colouring agent, at approximately 1 ‰ mass/volume).

4.2 Rapid method

Ethanolic solution at 50 % vol., prepared with demineralised water and coloured (methylene blue or other suitable colouring agent, at approximately 1 ‰ mass/volume).

4.3 Very fast control method

Ethanolic solution at 70 % vol., prepared with demineralised water and coloured (methylene blue or other suitable colouring agent, at approximately 1 ‰ mass/volume).

5 Apparatus

5.1 Crystallizer or other container, which can be closed or covered.

5.2 Bell jar or other closure system, to cover the crystallizer or the other container.

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5.3 Absorbent paper.

5.4 Ruler or other measuring device, with a reading accuracy of 0,5 mm.

6 Test conditions

6.1 Environment

Test shall be carried out in an environment with the following characteristics:

— Temperature: 21 °C ± 4 °C.

— Relative air humidity: 60 % ± 20 %.

6.2 Cork stopper

6.2.1 Temperature

At the beginning of test confirm that stoppers of test sample are at 21 °C ± 4 °C.

7 Sampling

From each lot, take the amount of stoppers that correspond to the sampling plan previously agreed between interested parties.

Stoppers from the sample shall not show visible defects that may interfere with the performance of the measurement.

8 Procedure

8.1 Reference method

8.1.1 Fill a crystallizer or other container to a height of 3 mm with the coloured hydro-ethanolic solution (4.1) or 6 mm for measurements on chamfered stoppers.

8.1.2 Place the stoppers upright in the crystallizer or other container making sure that each of the stoppers is separated by about 1 cm from the other stoppers and/or the edges of the container.

8.1.3 Cover with the bell jar and leave in contact for 24 h.

8.2 Rapid method

8.2.1 Fill a crystallizer or other container to a height of 3 mm with the coloured hydro-ethanolic solution (4.2) or 6 mm for measurements on chamfered stoppers.

8.2.2 Place the stoppers upright in the crystallizer or other container making sure that each of the stoppers is separated by about 1 cm from the other stoppers and/or the edges of the container.

8.2.3 Cover with the bell jar and leave in contact for 1 h.

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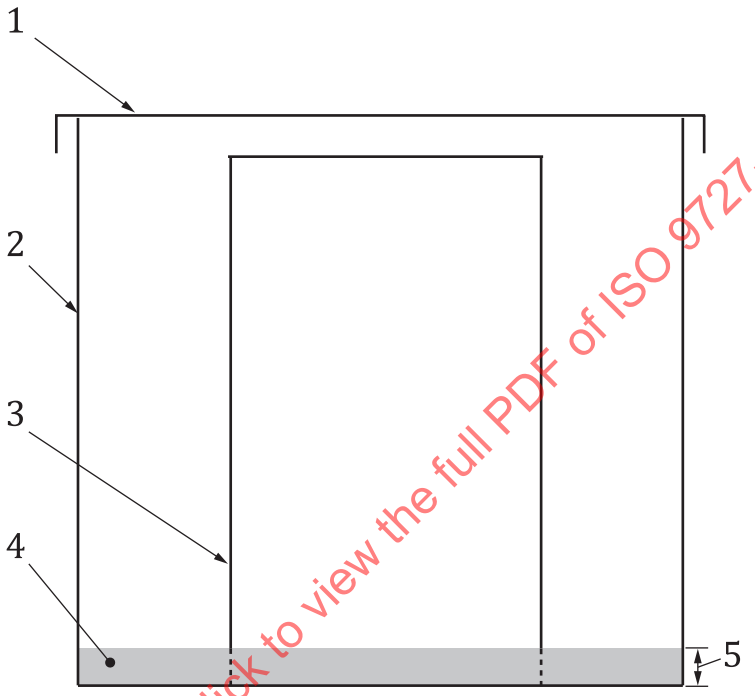
8.3 Very fast control method

8.3.1 Fill a crystallizer or other container to a height of 3 mm with the coloured hydro-ethanolic solution (4.3) or 6 mm for measurements on chamfered stoppers.

8.3.2 Place the stoppers upright in the crystallizer or other container making sure that each of the stoppers is separated by about 1 cm from the other stoppers and/or the edges of the container.

Cover with the bell jar and leave in contact for 10 min.



Key

1 bell jar
2 crystallizer or other container
3 cork stopper
4 coloured solution
5 height 3 mm (6 mm if chanfered stopper)

Figure 1 — Operating mode scheme

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9 Measuring and reporting results

The maximum height of the capillary rises appearing on the periphery of the stoppers is measured.

We take into account the possible rises above the limit of the dye, excluding punctual rises along a discontinuity of the cork material.

The test result for each stopper in the sample shall be expressed in millimeters.

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10 Test report

Test report shall include the following information:

a) a reference to this document, i.e. ISO 9727-8:2022, specifying the volume fraction of the solution in % used as well as the dye used and the duration of contact;

b) complete identification of the sample, including its type, and its origin;

c) sampling report;

d) results obtained;

e) any deviation to this document that may have affected the results.

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