INTERNATIONAL STANDARD

ISO 9727-7

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Cylindrical cork stoppers — Physical tests —

Part 7: Determination of dust content

Bouchons cylindriques en liège — Essais physiques —

Partie 7: Détermination de la quantité de poussières

Reference number
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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 9727-7 was prepared by Technical Committee ISO/TC 87, *Cork*.

This first edition of ISO 9727-7, together with the other parts of ISO 9727:2007, cancels and replaces ISO 9727:1991, which has been technically revised.

ISO 9727 consists of the following parts, under the general title *Cylindrical cork stoppers — Physical tests*:

— *Part 1: Determination of dimensions*

— *Part 2: Determination of mass and apparent density for agglomerated cork stoppers*

— *Part 3: Determination of humidity content*

— *Part 4: Determination of dimensional recovery after compression*

— *Part 5: Determination of extraction force*

— *Part 6: Determination of liquid tightness*

— *Part 7: Determination of dust content*

Cylindrical cork stoppers — Physical tests —

Part 7: Determination of dust content

1 Scope

This part of ISO 9727 specifies a test method for determining the dust content of a cylindrical cork stopper.

It is applicable to all types of cylindrical cork stoppers ready for use, intended to be completely inserted in the bottle neck (straight cork stoppers).

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 633, *Cork — Vocabulary*

3 Terms and definitions

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

3.1
straight cork stopper
«*ras de bague*»
stopper which is completely introduced in the bottle neck, its superior end reaching the top border of the bottle

4 Materials

4.1 Ethanolic solution (10 %), prepared with demineralised water and previously filtered through a membrane of 1,2 µm porosity.

5 Apparatus

5.1 Conical flask, of 500 ml capacity, with a bottom diameter of at least 100 mm.

5.2 Orbital stirrer, allowing to reach a rotational frequency between 140 r/min and 160 r/min.

5.3 Glass or stainless-steel filter, fixed to a vacuum device.

5.4 Membranes and oven, to dry them.

5.4.1 First possibility

5.4.1.1 **Membrane**, of cellulose acetate or polycarbonate with 1,2 µm porosity.

5.4.1.2 **Oven**, regulated at 30 °C ± 2 °C.

5.4.2 Second possibility

5.4.2.1 **Membrane**, of glass microfibre with 1,2 µm porosity.

5.4.2.2 **Oven**, regulated at 103 °C ± 4 °C.

5.5 **Balance**, with a resolution inferior or equal to 0,000 1 g.

5.6 **Desiccator**, with hygroscopic salt and saturation indicator.

6 Test conditions

6.1 Environment

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

— temperature 21 °C ± 4 °C;

— relative humidity of air 60 % ± 20 %.

6.2 Cork stoppers

6.2.1 Temperature

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

6.2.2 Humidity

At the beginning of the test, confirm that the stoppers of the test sample are at a humidity of 6 % ± 2 %.

If humidity is not between 4 % and 8 %, the result of the humidity obtained shall be referred to in the test report.

7 Sampling

From each lot, take the quantity of stoppers that correspond to the sampling plan previously agreed between the interested parties. The test piece is composed of 4 cork stoppers.

8 Procedure

8.1 Place 4 cork stoppers in a 500 ml conical flask (5.1) and add 250 ml of the filtered ethanolic solution (4.1).

8.2 Place the conical flask for 10 min on the stirring plate (5.2) at a rotational frequency between 140 r/min and 160 r/min.

8.3 Filter the ethanolic solution obtained through a membrane of 1,2 µm previously dried and weighted to 0,1 mg. Register the initial mass, m_1, expressed in milligrams.

8.3.1 First possibility (5.4.1): filter on a membrane of cellulose acetate or polycarbonate (5.4.1.1).

8.3.2 Second possibility (5.4.2): filter on a membrane of glass microfibre (5.4.2.1).

8.4 Rinse the stoppers and conical flask with 50 ml of filtered ethanolic solution (4.1) and filter (8.3).

8.5 Rinse the membrane funnel with 50 ml of filtered ethanolic solution (4.1) and filter (8.3).

8.6 Transport the membrane to the oven and let it dry according to one of the following possibilities.

8.6.1 First possibility (5.4.1): use the oven at 30 °C ± 2 °C (5.4.1.2) and let the membrane dry for 24 h.

8.6.2 Second possibility (5.4.2): use the oven at 103 °C ± 4 °C (5.4.2.2) and let the membrane dry for 1 h.

8.7 Let it cool in the desiccator for 30 min.

8.8 Weigh the membrane at ambient temperature to 0,1 mg and register the result, m_2, expressed in milligrams (final mass).

9 Results

The dust quantity per cork stopper, expressed in milligrams, rounded off to the nearest 0,1 mg, is given by the equation:

$$(m_2 - m_1) / 4$$

where

m_1 is the initial mass of the dried and weighted membrane (8.3);

m_2 is the final mass (8.8).

10 Test report

The test report shall include the following information:

a) a reference to this part of ISO 9727;

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

c) sampling report;

d) results obtained;

e) any deviation from this part of ISO 9727 that may have affected the results.

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