
**Cork bark selected as bottling
product —**

Part 1:
**Sensory evaluation — Methodology
for sensory evaluation by soaking**

Liège destiné aux produits de bouchage —

*Partie 1: Évaluation sensorielle — Méthodologie pour l'évaluation
sensorielle par macération*

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This first edition of ISO 22308-1, together with the other parts of ISO 22308, cancels and replaces ISO 22308:2005, which has been technically revised.

A list of all parts in the ISO 22308 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html

Cork bark selected as bottling product —

Part 1:

Sensory evaluation — Methodology for sensory evaluation by soaking

1 Scope

This document defines a test method for the detection, qualification and possible assessment of odours/ flavours exogenous to cork bark selected as bottling product in contact with beverages, still, sparkling and sparkling wines, alcohols and spirits, beers and ciders.

This document is applicable to:

- cork bark selected as bottling product in all its forms;
- all cork components of cork stoppers: granules, discs, bodies and shanks;
- all types of cork stoppers, semi-finished (shaped), semi-finished (semi-finished stoppers possibly washed and possibly colmated and/or coated) or ready for use (semi-finished stoppers, possibly branded and surface treated).

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*

ISO 3591, *Sensory analysis — Apparatus — Wine-tasting glass*

ISO 5492, *Sensory analysis — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 633, ISO 5492 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>;
- IEC Electropedia: available at <http://www.electropedia.org/>.

3.1

flavour

complex combination of the olfactory, gustative and trigeminal sensations perceived during tasting

Note 1 to entry: Flavour may be influenced by tactile, thermal, painful and/or kinaesthetic effects.

[SOURCE: ISO 5492:2008, 3.20]

3.2

odour

sensation perceived by means of the olfactory organ in sniffing certain volatile substances

[SOURCE: ISO 5492:2008, 3.18]

3.3

sensory assessor

any person taking part in a sensory test

Note 1 to entry: A naive assessor is a person who does not meet any particular criterion.

Note 2 to entry: An initiated assessor has already participated in a sensory test.

[SOURCE: ISO 5492:2008, 1.5]

3.4

selected assessor

assessor chosen for his/her ability to perform a sensory test

[SOURCE: ISO 5492:2008, 1.6]

3.5

expert sensory assessor

selected assessor (3.4) who has demonstrated sensory sensitivity and who has received considerable training and experience in sensory testing

3.6

sensory panel

group of assessors participating in a sensory test

[SOURCE: ISO 5492:2008, 1.9]

4 Principle

The method consists of detecting, qualifying and evaluating the odours/flavours of the medium in which the cork bark selected as bottling product, stoppers or their components have been macerated. This detection/qualification is based on the organoleptic comparison between a control solution and the solution obtained after the maceration of the cork bark selected as bottling product.

5 Reagents and materials

5.1 Clean flask, material inert, odourless, closable vials of sufficient capacity for unit maceration, or 100 ml, 250 ml or up to 500 ml capacity. The vials are filled to the brim. The cover should not release or fix any odour.

5.2 Clean crystallizers, material inert, odourless, with a capacity of 1 000 ml, closable, with a cover which shall neither release nor fix odour, and fitted with a device for fixing stoppers for sparkling wines.

5.3 Tasting glasses, in accordance with ISO 3591.

5.4 Commercial spring water, organoleptically neutral and with low minerality.

NOTE Low minerality water can have a mineral salt content, calculated as a fixed residue, not greater than 500 mg/l.

5.5 Watch glass.

6 Test conditions

The test shall be carried out in a quiet, well ventilated and odourless room, in an environment that respects the following characteristics

- temperature: $21\text{ °C} \pm 4\text{ °C}$,
- humidity: $60\% \pm 20\%$,

and without any factors that could interfere with the test. All intervening involved in the test (sensory panel, preparation of samples) shall be informed that they shall not use perfumed cosmetic products.

7 Sensory panel

The sensory panel shall be composed of at least 3 selector assessors.

8 Preparation of samples

8.1 The sample preparation is different depending on the type of cork bark selected as bottling product to be analysed and as an example:

- a) For completely inserted cork stoppers, put the whole 4 or 5 stoppers (according to their size) into the appropriate 250 ml flask. Fill it to the brim with water and close it.
- b) For partially inserted cork stopper for example agglomerated cork stoppers with natural cork discs for sparkling wines, use an appropriate device to hold the stopper upright and immerse the discs and one centimetre of the body in the water. In this case use a clean crystallizer (5.2) and close.
- c) For bar-top stopper, keep only the cork part and immerse it in water. Close the flask.
- d) For the discs, place 5 discs in appropriate 100 ml flask. Fill it to the brim with water and close it.
- e) For cork granules, place 12 g of granules in a 250 ml flask. Fill it to the brim with water and close it.
- f) If only the mould family is intended to be detected, it is possible to group the stoppers up to 5 units in appropriate volume of water. If an odour/flavour is detected, a new individual test will be performed with the same stoppers tested one by one.

8.2 Prepare a control flask with water, without immersing cork stopper. Close the flask.

8.3 After having prepared the flasks, leave them in maceration for $24\text{ h} \pm 2\text{ h}$, at a temperature of $21\text{ °C} \pm 4\text{ °C}$.

8.4 Pour the contents of the flasks into the tasting glasses and close with a watch glass. In the case of partially inserted cork stopper for example agglomerated cork stoppers with natural cork discs for sparkling wines the analysis is carried out directly on the crystallizer, after removal of the cork stopper.

8.5 Wait at least 5 min, before starting the test.

9 Test method

Each maceration solution shall be analysed independently by the subjects participating in the test.

- a) Step 1: Olfactory evaluation.
- b) Step 2: Gustative evaluation (optional, at the discretion of the subject if necessary, in case of doubt).

- c) Step 3: Individual olfactory evaluation: for macerations of corks by 4/5, take again each stopper for an individual olfactory evaluation in case of detection of an alteration.
- d) Step 4: Decision. If the possible exogenous odour/flavour corresponds to one or more families of odours/flavours described in [Clause 10](#), record its intensity according to its level.

To avoid sensory fatigue of the subject, allow a break between each sample.

To preserve the memory of the olfactory expression of the control flask, periodically re-examine the control flask.

10 Expression of results

The expression of results should include the following points.

10.1 Odour/flavour families

The description of perceptions will be made in relation to the following odour/flavour families:

Chemical family	Hydrocarbon Medicine Pharmaceutical product Rancid oil Solvent Ink Phenol
Plant family	Fresh grass Hay Eucalyptus trees
Earthy family	Wetland Earthy
Mouldy family	Dry mould Cellar mould
Reduced family	Rotten egg Stagnant water

10.2 Number of macerations and/or of cork stoppers and/or of corking products for which the jury has detected odours/flavours corresponding to one of the families described in [10.1](#)

If at least 2 subjects detect and qualify odours/flavours belonging to the same family, even if the final descriptor is different, the odour/flavour will be described and classified in a family described in [10.1](#).

EXAMPLE 1

Sensory assessor	Odour/Flavour
1	Fresh grass
2	Hay
3	Eucalyptus trees
Final decision	Plant family

EXAMPLE 2

Sensory assessor	Odour/Flavour
1	Fresh grass
2	Hay
3	Mould
Final decision	Plant family

In the case of disagreement between the subjects on the qualification of odours/flavours, if the descriptors used by members of the jury belong to different families, the odour/flavour will be described as unqualified.

EXAMPLE 3

Sensory assessor	Odour/Flavour
1	Earthy
2	Phenol
3	Cellar mold
Final decision	Unqualified

10.3 Intensity of each odour/flavour

The intensity of each odour/flavour will be classified into four levels: suspicion of presence (level 1), light (level 2), medium (level 3) or strong (level 4).

In case of disagreement between subjects about the intensity of an odour/flavour in the same family, use the arithmetic mean.

EXAMPLE 1

Sensory assessor	Odour/flavour intensity
1	2
2	1
3	3
Final decision	2

In the case of an unqualified odour/flavour, the average intensity will not be calculated.

11 Test report

The test report shall contain the following information:

- a) all data necessary for the identification of the samples (type of cork stopper, type of cork bark selected as bottling product, etc.);