
International Standard



7534

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Instant coffee — Determination of insoluble matter content

Café soluble — Détermination des matières insolubles

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Foreword

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International Standard ISO 7534 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

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Instant coffee — Determination of insoluble matter content

1 Scope and field of application

This International Standard specifies a method for the determination of the insoluble matter content of instant coffee.

The method is most suitable for use for insoluble matter contents of the order of, or above, 500 mg/kg.

2 Reference

ISO 6670, *Instant coffee in cases with liners — Sampling*.

3 Definition

insoluble matter (in instant coffee) : Matter present in a solution prepared according to this International Standard, the particles of which are retained on a filtering disc having 100 μm square openings.

NOTE — This size of openings is a compromise between that used in coffee machines and the need to avoid the retention, with the insoluble matter, of substances having a desirable effect on the mouth-feel of the beverage.

4 Principle

Dissolution of instant coffee in water, filtration through a filtering disc having 100 μm square openings, and gravimetric determination of the matter retained.

5 Apparatus and materials

Ordinary laboratory apparatus, and in particular :

5.1 Filtration apparatus, according to the figure, consisting of the following parts.

5.1.1 Metal filtering disc, comprising a high precision sieve of diameter 29 mm, of nickel, electroformed, having 100 μm square openings, mounted on a supporting grid with round holes, having a solid rim about 3 mm wide and 70 μm thick.

5.1.2 Cup, of borosilicate glass, with screw joint.

5.1.3 Tulip, of borosilicate glass, with screw joint.

5.1.4 Flange, for heading joint.

5.1.5 Sealing rings.

5.2 Tweezers.

5.3 Electric oven, capable of being maintained at 103 ± 2 °C.

5.4 Filter flask and device for the application of a partial vacuum (for example a vacuum pump).

5.5 Glass beads, of diameter about 4 mm.

5.6 Petri dish, of diameter about 60 mm.

5.7 Beaker, of capacity 800 ml.

5.8 Glass rod, with rounded ends.

5.9 Analytical balance.

6 Sampling

See ISO 6670.

7 Procedure

7.1 Preparation of the filtration apparatus

Spread the glass beads (5.5) over the bottom of the Petri dish (5.6). Place the clean filtering disc (5.1.1) in the Petri dish and dry for 30 min in the oven (5.3) at 103 ± 2 °C. Cool to room temperature in a desiccator and weigh the disc to the nearest 0,1 mg.

Set up the filtration apparatus according to the figure and attach it to the filtering flask using a conical rubber joint. Always use the filtering disc with the supporting grid (large holes) down.

7.2 Test portion and preparation of the solution

Into the beaker (5.7), weigh, to the nearest 0,01 g, about 5 g of instant coffee. Add 500 ml of boiling distilled water and stir for 10 to 15 s using the glass rod (5.8).

7.3 Filtration

Pour the solution, as hot as possible, into the filtration apparatus. Leave it to filter.

To facilitate the filtration, pat the top of the cup with the palm of the hand. The use of vacuum will not facilitate the filtration in any way.

Rinse the inside walls of the beaker and the cup with about 200 ml of hot water, so that all particles of insoluble matter can be collected on the filtering disc.

Finally, apply partial vacuum to remove the water retained on the disc.

Carefully dismantle the filtration apparatus in order to draw out the filtering disc without losing any of the insoluble matter.

Place the filtering disc in the Petri dish again and dry it in the oven at 103 ± 2 °C for 30 min. Cool to room temperature in a desiccator and weigh the disc to the nearest 0,1 mg.

8 Expression of results

The insoluble matter content of the sample, expressed as a percentage by mass, is given by the formula

$$\frac{m_2 - m_1}{m_0} \times 100$$

where

m_0 is the mass, in grams, of the test portion (7.2);

m_1 is the mass, in grams, of the filtering disc (7.1);

m_2 is the mass, in grams, of the filtering disc and the insoluble matter (7.3).

9 Test report

The test report shall show the method used and the results obtained. It shall also mention any operating details not specified in this International Standard, or regarded as optional, together with details of any incidents likely to have influenced the results.

The test report shall include all the information necessary for the complete identification of the sample.

Dimensions in millimetres

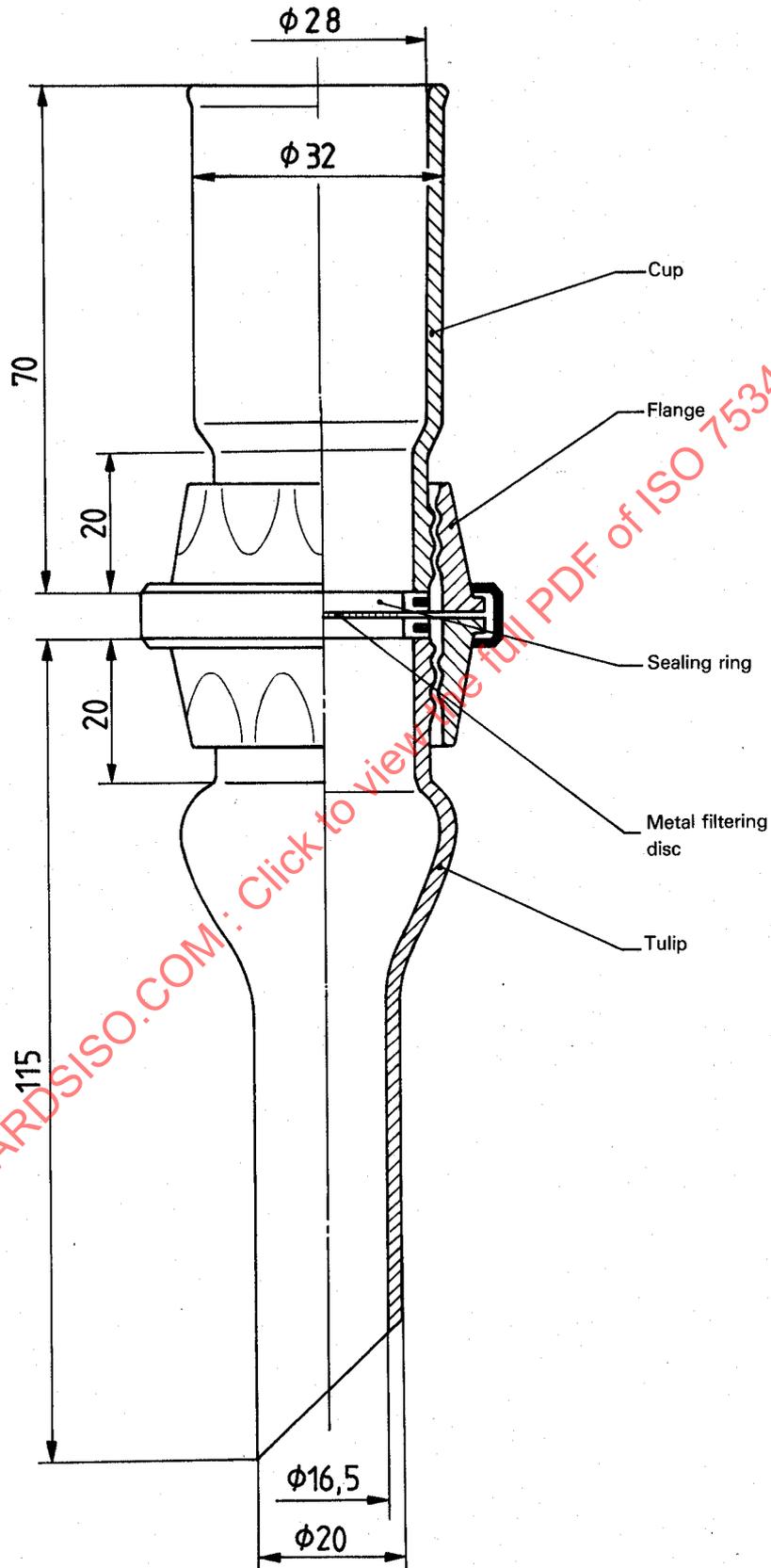


Figure — Filtration apparatus

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