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**Dried milk and dried milk products —
Determination of their behaviour in hot
coffee (Coffee test)**

*Lait sec et produits laitiers secs — Détermination de leur comportement
dans le café chaud (Essai du café)*



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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.

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 15322|IDF 203 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products*, and the International Dairy Federation (IDF), in collaboration with AOAC International. It is being published jointly by ISO and IDF and separately by AOAC International.

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Foreword

IDF (the International Dairy Federation) is a worldwide federation of the dairy sector with a National Committee in every member country. Every National Committee has the right to be represented on the IDF Standing Committees carrying out the technical work. IDF collaborates with ISO and AOAC International in the development of standard methods of analysis and sampling for milk and milk products.

Draft International Standards adopted by the Action Teams and Standing Committees are circulated to the National Committees for voting. Publication as an International Standard requires approval by at least 50 % of the National Committees casting a vote.

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All work was carried out by the Joint ISO/IDF/AOAC Action Team *Physical properties and rheological tests*, of the Standing Committee on *Minor components and characterization of physical properties*, under the aegis of its project leader, Mr E. Refstrup (DK).

Introduction

Milk powder, particularly instant or agglomerated whole milk powder, is often used as coffee whitener by consumers and is thus reconstituted directly in hot coffee. Hence the behaviour of the milk powder in the hot coffee has become an increasingly important functional and aesthetic property. Some powders will leave floating particles or clusters of particles on the surface, while others will partially coagulate in the hot, acidic environments and result in sediment or sludge in the bottom of the cup.

The behaviour in hot coffee can be influenced by certain compositional and technological parameters, such as protein content, addition of stabilizing salts and preheat treatment of the milk. The temperature and pH of the coffee and the hardness of the water used to prepare the coffee are also of significance.

Simple methods for the determination of floaters have been described [for example in *Analytical Methods for Dry Milk Products*, 1978, using the A/S Niro Atomizer, Søborg, Denmark¹⁾].

NOTE The method in this International Standard is based on a method developed at the New Zealand Dairy Research Institute, Palmerston North, New Zealand.

1) A/S Niro Atomizer, Søborg, Denmark, is the trade name of a supplier.

This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO or IDF of this product.

Dried milk and dried milk products — Determination of their behaviour in hot coffee (Coffee test)

1 Scope

This International Standard specifies a method for the determination of the behaviour in hot coffee of dried milk and dried milk products, either instant or non-instant.

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 8156 | IDF 129, *Dried milk and dried milk products — Determination of insolubility index*

3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

3.1

coffee test

amount of sediment determined by the procedure specified in this International Standard

NOTE The results are expressed in millilitres.

4 Principle

A test portion is added to coffee preheated to the required temperature. The mixture is stirred manually with a special spatula in a specified way and for a certain time. After a specified standing period, the mixture is centrifuged in two graduated tubes. The sum of the volume of sediment in the two tubes is recorded.

5 Reagents

Use only reagents of recognized analytical grade, unless otherwise specified, and distilled or demineralized water or water of equivalent purity. The reagents shall leave no appreciable residue when the determination is carried out by the method specified.

5.1 Instant coffee powder

The chemical composition and, in particular, the acidity of the applied coffee may affect the result of the coffee test. For routine control purposes, therefore, always use the same brand of coffee.