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Milk fat — Determination of peroxide value

Matière grasse laitière — Détermination de l'indice de peroxyde



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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 3976|IDF 74 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products*, and the International Dairy Federation (IDF). It is being published jointly by ISO and IDF.

This edition of ISO 3976|IDF 74 cancels and replaces ISO 3976:1977, which has been technically revised. A comparison of the results using the new reagent (methanol/1-decanol/*n*-hexane mixture) with those found using chloroform/methanol is given in Annex C.

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 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 IDF National Committees casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. IDF shall not be held responsible for identifying any or all such patent rights.

ISO 3976|IDF 74 was prepared by the International Dairy Federation (IDF) and Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products*. It is being published jointly by IDF and ISO.

All work was carried out by the Joint ISO-IDF Action Team on *Fat*, of the Standing Committee on *Main components of milk*, under the aegis of its project leader, Mr A. van Reusel (BE).

This edition of ISO 3976|IDF 74 cancels and replaces IDF 74A:1991, which has been technically revised. A comparison of the results using the new reagent (methanol/1-decanol/*n*-hexane mixture) with those found using chloroform/methanol is given in Annex C.

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Milk fat — Determination of peroxide value

WARNING — The use of this International Standard may involve the use of hazardous materials, operations, and equipment. This International Standard does not purport to address all the safety risks associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of local regulatory limitations prior to use.

1 Scope

This International Standard specifies a method for the determination of the peroxide value of anhydrous milk fat.

The method is suitable for anhydrous milk fat having a peroxide value up to 1,3 mmol of oxygen per kilogram.

NOTE For milk fat samples with peroxide values between 0,5 mmol and 1,3 mmol of oxygen per kilogram, an extended procedure (see Annex A) is used. For milk fat samples with peroxide values of more than 1,3 mmol of oxygen per kilogram, an iodine/thiosulfate method can be used (e.g. AOAC 920.160).

2 Terms and definitions

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

2.1

peroxide value

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

NOTE The peroxide value is expressed as millimoles of oxygen per kilogram.

3 Principle

A test portion is dissolved in a mixture of methanol/1-decanol/*n*-hexane, then iron(II) chloride and ammonium thiocyanate are added. The peroxides oxidize the iron(II) which forms a red iron(III) complex with the ammonium thiocyanate. The amount of substance is calculated from a photometric determination of the red iron(III) complex, after a fixed period of reaction.

4 Reagents

Use only reagents of recognized analytical grade, unless otherwise specified, and distilled or demineralized water or water of at least equivalent purity.

4.1 **Methanol/1-decanol/*n*-hexane mixture**, in ratio 3:2:1 (volume fraction).

Mix 2 volume parts of 1-decanol with 1 volume part of *n*-hexane. Add 3 volume parts of anhydrous methanol to that mixture and mix again.