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Caseins and caseinates — Determination of fat content — Gravimetric method (Reference method)

Caséines et caséinates — Détermination de la teneur en matière grasse — Méthode gravimétrique (Méthode de référence)

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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 5543|IDF 127 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.

This edition of ISO 5543|IDF 127 cancels and replaces ISO 5543:1986, of which it constitutes a minor revision. Only editorial changes have been made.

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 Group of Experts, *Fat determination* (E31), under the aegis of its project leader, Mr J. Eisses (NL).

This edition of ISO 5543|IDF 127 cancels and replaces IDF 127A:1988. Only editorial changes have been made.

Introduction

This International Standard has been prepared within the framework of producing a series of methods, which are harmonized to the greatest possible extent, for the gravimetric determination of the fat content of milk, milk products and milk-based food.

A method based on the principle of Schmid-Bondzynski-Ratzlaff (SBR), involving digestion with hydrochloric acid, has been chosen for the following reasons:

a) many caseins do not readily dissolve in ammonia, either because they contain or consist of hard lumps, or because they are not soluble, or are only poorly soluble (e.g. rennet casein), and therefore cannot be examined according to the method based on the Röse-Gottlieb (RG) principle as used for milk and most milk products;

b) all caseins and caseinates, due to their low lactose content [less than 5 % (mass fraction) of dry matter], can be examined according to the SBR principle; this has the advantage over the Weibull method in that the method can be carried out using the same apparatus as that specified for the RG method and, at the same time, is less time consuming;

c) methods based on the SBR principle have already found wide application in many countries as official or standardized methods for the examination of all caseins and caseinates.

Caseins and caseinates — Determination of fat content — Gravimetric method (Reference method)

1 Scope

This International Standard specifies the reference method for the determination of the fat content of all types of caseins and caseinates.

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 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 3889, *Milk and milk products — Determination of fat content — Mojonnier-type fat extraction flasks*

ISO 5550, *Caseins and caseinates — Determination of water content (Reference method)*

3 Terms and definitions

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

3.1
fat content of caseins and caseinates
all the substances determined by the method specified in this International Standard

NOTE It is expressed as a mass fraction in percent.

4 Principle

A test portion is digested with hydrochloric acid, then ethanol is added. The acid-ethanolic solution is subsequently extracted with diethyl ether and light petroleum, then the solvents are removed by distillation or evaporation.The mass of the substances extracted, which are soluble in light petroleum, is determined. (This is usually known as the Schmid-Bondzynski-Ratzlaff principle.)

5 Reagents

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