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Milk — Determination of alkaline phosphatase

Lait — Détermination de la phosphatase alcaline

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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 3356|IDF 63 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 second edition of ISO 3356|IDF 63 cancels and replaces the first edition of ISO 3356:1975, which has been technically revised.

Foreword

IDF (the International Dairy Federation) is a non-profit organization representing the dairy sector worldwide. IDF membership comprises National Committees in every member country as well as regional dairy associations having signed a formal agreement on cooperation with IDF. All members of IDF have the right to be represented at 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 IDF National Committees casting a vote.

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All work was carried out by the Joint ISO-IDF Action Team on *Heat treatment* of the Standing Committee on *Minor components and characterization of physical properties* under the aegis of its project leader, Mrs. M. Nicolas (FR).

This edition of ISO 3356 | IDF 63 cancels and replaces IDF 63:1971, which has been technically revised.

Milk — Determination of alkaline phosphatase

WARNING — The use of this International Standard may involve hazardous materials, operations and reagents. Persons using this International Standard should be familiar with normal laboratory practice. This International Standard does not purport to address all the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard specifies a method for the determination of alkaline phosphatase activity in milk.

The method applies to alkaline phosphatase activities not less than 1 µg of phenol per millilitre.

The method is also suitable for the determination of alkaline phosphatase activity in milk powder, buttermilk and buttermilk powder, whey and whey powder.

2 Terms and definitions

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

2.1
alkaline phosphatase activity
ALP activity
⟨alkaline phosphatase activity in milk⟩ quantity of phenol liberated by the sample determined according to the procedure specified in this International Standard

NOTE The alkaline phosphatase activity is expressed as the quantity of phenol, in micrograms, liberated by 1 ml of the sample or of reconstituted sample, under the conditions specified in this International Standard. Other International Standards (e.g. ISO 11816-1 | IDF 155-1[6], ISO 22160 | IDF 209[7]) express alkaline phosphatase activity in milliunits per litre. The literature gives information on the equivalence of the different units used to express the alkaline phosphatase activity.

3 Principle

The sample is diluted with a buffer at pH 10,6 and incubated at a temperature of 37 °C for 1 h. Under these conditions, any alkaline phosphatase present in the sample liberates phenol from the disodium phenylphosphate added. The phenol liberated reacts with a quinoneimide (dibromoquinonechlorimide) to produce dibromoindophenol (blue colour) which is measured photometrically at 610 nm.

4 Reagents

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