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**Milk — Determination of total phosphorus
content — Method using molecular
absorption spectrometry**

*Lait — Détermination de la teneur en phosphore total — Méthode par
spectrométrie d'absorption moléculaire*



Reference numbers
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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 9874|IDF 42 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 9874|IDF 42 cancels and replaces ISO 9874:1992, of which it constitutes a minor revision.

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 9874|IDF 42 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 former Joint ISO/IDF/AOAC Group of Experts on *Nitrate, nitrite and phosphorus in cheese and other dairy products* (E8), under the aegis of its chairman, Mr. G. Bråthen (NO).

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Milk — Determination of total phosphorus content — Method using molecular absorption spectrometry

1 Scope

This International Standard specifies a molecular absorption spectrometric method for the determination of the total phosphorus content of milk.

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 648:1977, *Laboratory glassware — One-mark pipettes*

ISO 1042:1998, *Laboratory glassware — One-mark volumetric flasks*

ISO 4788:2005, *Laboratory glassware — Graduated measuring cylinders*

3 Terms and definitions

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

3.1

total phosphorus content

mass fraction of substances determined by the method specified in this International Standard

NOTE It is expressed as a mass fraction in percent.

4 Principle

A sample of milk is treated by a wet digestion method using sulfuric acid and hydrogen peroxide, or by dry ashing. Molybdenum blue is formed by the addition of molybdate/ascorbic acid solution. The absorbance at a wavelength of 820 nm is measured spectrophotometrically.

5 Reagents

All reagents shall be of recognized analytical grade, unless otherwise specified. The water used shall be distilled or deionized water, free from phosphorus compounds.

5.1 Concentrated sulfuric acid, $\rho_{20} = 1,84$ g/ml, $c(\text{H}_2\text{SO}_4) \approx 18$ mol/l.

5.2 Dilute sulfuric acid, $c(\text{H}_2\text{SO}_4) \approx 5$ mol/l.

Carefully add, while stirring continuously, 278 ml of concentrated sulfuric acid (5.1) to 722 ml of water.