
**Milk and milk products — Determination
of calcium, sodium, potassium and
magnesium contents — Atomic
absorption spectrometric method**

*Lait et produits laitiers — Détermination des teneurs en calcium,
sodium, potassium et magnésium — Méthode spectrométrique par
absorption atomique*



Reference numbers
ISO 8070:2007(E)
IDF 119:2007(E)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. Neither the ISO Central Secretariat nor the IDF accepts any liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies and IDF national committees. In the unlikely event that a problem relating to it is found, please inform the ISO Central Secretariat at the address given below.

This document is a preview generated by EVS



COPYRIGHT PROTECTED DOCUMENT

© ISO and IDF 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO or IDF at the respective address below.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

International Dairy Federation
Diamant Building • Boulevard Auguste Reyers 80 • B-1030 Brussels
Tel. + 32 2 733 98 88
Fax + 32 2 733 04 13
E-mail info@fil-idf.org
Web www.fil-idf.org

Published in Switzerland

Contents

Page

Foreword.....	iv
Foreword.....	v
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	1
4 Principle.....	1
5 Reagents	2
6 Apparatus	2
7 Sampling.....	3
8 Preparation of test sample	4
8.1 Milk and whey.....	4
8.2 Buttermilk	4
8.3 Yogurt	4
8.4 Cream	4
8.5 Dried milk.....	4
8.6 Butter.....	4
8.7 Cheese	5
8.8 Caseins and caseinates	5
9 Procedure	5
9.1 Test portion	5
9.2 Decomposition of organic matter	6
9.3 Determination	7
10 Calculation and expression of results.....	8
10.1 Calculation.....	8
10.2 Expression of test results	9
11 Precision	9
11.1 Repeatability.....	9
11.2 Reproducibility	9
12 Test report	10
Annex A (informative) Interlaboratory trials	11
Bibliography	14

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 8070|IDF 119 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 8070|IDF 119 cancels and replaces the first edition (ISO 8070:1987), which has been technically revised.

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 8070|IDF 119 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 *Minor compounds*, of the Standing Committee on *Minor components and characterization of physical properties*, under the aegis of its project leaders, Mr L. Noël (FR) and Mr. M. Carl (DE).

This edition of ISO 8070|IDF 119 cancels and replaces IDF 119A:1987 and IDF 154:1992, which have been technically revised.

This document is a preview generated by EVS

Milk and milk products — Determination of calcium, sodium, potassium and magnesium contents — Atomic absorption spectrometric method

1 Scope

This International Standard specifies a flame atomic absorption spectrometric method for the determination of calcium, sodium, potassium and magnesium contents in milk and milk products.

The method is applicable for milk and whey, buttermilk, yogurt, cream, dried milk, butter, cheese, casein and caseinate.

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, *Laboratory glassware — One-mark pipettes*

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

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

3 Terms and definitions

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

3.1

calcium, sodium, potassium, magnesium contents

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

NOTE The respective contents are expressed in milligrams per gram.

4 Principle

The organic matter is decomposed by dry ashing or by wet digestion using nitric acid either in an open microwave-assisted wet digestion system or in a pressurized microwave-assisted wet digestion system or in a pressurized polytetrafluoroethylene (PTFE) decomposition vessel or any appropriate instrumentation in wet digestion. The ash containing calcium, sodium, potassium, and magnesium is dissolved in a nitric acid solution in the case of dry ashing, or the digests diluted in the case of wet digestion. The test and calibration solutions are atomized into an air-acetylene flame of an atomic absorption spectrometer and their absorption is measured at appropriate wavelengths.