



SLOVENSKI STANDARD SIST EN ISO 8069:2007

01-oktober-2007

A`Y_c`j`dfU i`!`8 c`c` Yj Ub`Y`j gYVbcgh`j`a` `Y` bY`_j`g`]bY`]b`U`Huc`j` fIGC`, \$* - .&\$) Ł

Dried milk - Determination of content of lactic acid and lactates (ISO 8069:2005)

Milchpulver - Bestimmung des Gehalts an Milchsäure und Lactaten (ISO 8069:2005)

Lait sec - Determination de la teneur en acide lactique et en lactates (ISO 8069:2005)

iteh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: EN ISO 8069:2007

[SIST EN ISO 8069:2007](https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007)

<https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007>

ICS:

67.100.10 T | ^ \ [Á Á ! ^ á ^ | æ ä | ^ } ä Milk and processed milk products
] ! [ã ç [å å

SIST EN ISO 8069:2007

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 8069:2007

<https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007>

ICS 67.100.10

English Version

Dried milk - Determination of content of lactic acid and lactates
(ISO 8069:2005)

Lait sec - Détermination de la teneur en acide lactique et en
lactates (ISO 8069:2005)

Milchpulver - Bestimmung des Gehalts an Milchsäure und
Lactaten (ISO 8069:2005)

This European Standard was approved by CEN on 19 May 2007.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

[SIST EN ISO 8069:2007](https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007)

<https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of ISO 8069:2005 has been prepared by Technical Committee ISO/TC 34 "Agricultural food products" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 8069:2007 by Technical Committee CEN/TC 302 "Milk and milk products - Methods of sampling and analysis", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2007, and conflicting national standards shall be withdrawn at the latest by December 2007.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 8069:2005 has been approved by CEN as EN ISO 8069:2007 without any modifications.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 8069:2007](https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007)
<https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007>

INTERNATIONAL
STANDARD

ISO
8069

IDF
69

Second edition
2005-09-15

**Dried milk — Determination of content of
lactic acid and lactates**

Lait sec — Détermination de la teneur en acide lactique et en lactates

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 8069:2007](https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007)

<https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007>



Reference numbers
ISO 8069:2005(E)
IDF 69:2005(E)

© ISO and IDF 2005

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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 8069:2007](https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007)

<https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007>

© ISO and IDF 2005

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
1 Scope	1
2 Terms and definitions.....	1
3 Principle.....	1
4 Reagents	1
5 Apparatus	3
6 Sampling.....	3
7 Preparation	4
7.1 Preparation of test sample.....	4
7.2 Test portion	4
7.3 Blank test.....	4
7.4 Preparation of solution and deproteination.....	4
8 Procedure	4
8.1 Test to check the activity of reagents.....	4
8.2 Determination.....	5
9 Calculation and expression of results.....	6
9.1 Calculation.....	6
9.2 Expression of results	7
10 Precision.....	7
10.1 Interlaboratory test	7
10.2 Repeatability.....	7
10.3 Reproducibility.....	8
11 Test report	8
Annex A (normative) Good laboratory practice (GLP) rules for the performance of enzymatic analyses	9
Bibliography	13

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 8069|IDF 69 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.

(standards.iteh.ai)

This edition of ISO 8069|IDF 69 cancels and replaces ISO 8069:1986, which has been technically revised.

SIST EN ISO 8069:2007

<https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007>

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 8069|IDF 69 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 *Lactose and lactate determination*, of the Standing Committee on *Main components of milk*, under the aegis of its project leader, Mr J Romero (US).

This edition of ISO 8069|IDF 69 cancels and replaces IDF 69:1987 which has been technically revised.

[SIST EN ISO 8069:2007](https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007)

<https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 8069:2007

<https://standards.iteh.ai/catalog/standards/sist/64388017-161a-418f-849b-ebb2e7267bc1/sist-en-iso-8069-2007>

Dried milk — Determination of content of lactic acid and lactates

1 Scope

This International Standard specifies an enzymatic method for the determination of the lactic acid and lactates content of all types of dried milk.

2 Terms and definitions

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

2.1

lactic acid and lactates content

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

NOTE It is expressed as milligrams of lactic acid per 100 g of non-fat solids.

3 Principle

A test portion of dried milk is dissolved in warm water. The fat and proteins are precipitated then filtered. The filtrate is treated with the following enzymes and biochemical substances, added simultaneously, but acting in sequence:

- a) L-lactate dehydrogenase (L-LDH) and D-lactate dehydrogenase (D-LDH), in the presence of nicotinamide adenine dinucleotide (NAD), to oxidize lactate to pyruvate and to convert NAD to its reduced form NADH;
- b) glutamate pyruvate transaminase (GPT), in the presence of L-glutamate, to transform pyruvate into L-alanine and to convert L-glutamate to α -ketoglutarate.

The amount of NADH produced is determined by spectrophotometric measurement at a wavelength of 340 nm, and is proportional to the lactic acid and lactates content.

4 Reagents

Use only reagents recognized analytical grade. The water used in the preparation of the enzyme solutions shall be of at least doubly glass-distilled purity and the water used for other purposes shall be glass-distilled or of at least equivalent purity.

4.1 Potassium hexacyanoferrate(II) solution, $c(\text{K}_4[\text{Fe}(\text{CN})_6] \cdot 3\text{H}_2\text{O}) = 35,9 \text{ g/l}$.

Dissolve 35,9 g of potassium hexacyanoferrate(II) trihydrate in water. Dilute with water to 1 000 ml and mix.

4.2 Zinc sulfate solution, $c(\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}) = 71,8 \text{ g/l}$.

Dissolve 71,8 g of zinc sulfate heptahydrate in water. Dilute with water to 1 000 ml and mix.