



This is a preview of ISO 11816-1:2024. [Click here to purchase the full version from the ANSI store.](#)

**ISO 11816-1**

**IDF 155-1**

**Milk and milk products —  
Determination of alkaline  
phosphatase activity —**

**Part 1:  
Fluorimetric method for milk and  
milk-based drinks**

*Lait et produits laitiers — Détermination de l'activité de la  
phosphatase alcaline —*

*Partie 1: Méthode fluorimétrique pour le lait et les boissons à  
base de lait*

**Fourth edition  
2024-01**

This is a preview of ISO 11816-1:2024. Click [here](#) to purchase the full version from the ANSI store.



## **COPYRIGHT PROTECTED DOCUMENT**

© ISO and IDF 2024

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester:

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11

Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

International Dairy Federation  
Silver Building • Bd Auguste Reyers 70/B  
B-1030 Brussels  
Phone: +32 2 325 67 40  
Fax: +32 2 325 67 41  
Email: [info@fil-idf.org](mailto:info@fil-idf.org)  
Website: [www.fil-idf.org](http://www.fil-idf.org)

This is a preview of ISO 11816-1:2024. Click here to purchase the full version from the ANSI store.

<b>Forewords</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>1</b>
<b>5 Reagents</b> .....	<b>2</b>
<b>6 Apparatus</b> .....	<b>3</b>
<b>7 Sampling</b> .....	<b>4</b>
<b>8 Preparations</b> .....	<b>4</b>
8.1 Alkaline phosphatase-free milk.....	4
8.2 Preparation of the test sample.....	4
8.2.1 General.....	4
8.2.2 Pasteurized test samples.....	4
8.2.3 Dilution of test samples with high ALP values.....	4
<b>9 Procedure</b> .....	<b>4</b>
9.1 Verification of instrument performance.....	4
9.1.1 General.....	4
9.1.2 Daily instrument tests.....	5
9.1.3 Using FLM200.....	5
9.1.4 Using FLM300.....	5
9.1.5 Controls.....	5
9.2 Reagent controls to test the suitability of ready-to-use working substrate ( <a href="#">5.3</a> ).....	6
9.3 Calibration.....	6
9.3.1 General.....	6
9.3.2 Using FLM200.....	6
9.3.3 Using FLM300.....	6
9.4 Determination.....	7
9.5 Test-sample-related controls.....	8
9.5.1 Recommended negative and positive control tests.....	8
9.5.2 Interfering substance test.....	8
9.5.3 Heat-stable microbial alkaline phosphatase control test.....	8
<b>10 Calculation and expression of results</b> .....	<b>8</b>
10.1 Calibration ratio.....	8
10.2 Calculation.....	9
10.3 Expression of test results.....	9
<b>11 Precision</b> .....	<b>9</b>
11.1 Interlaboratory study.....	9
11.2 Repeatability.....	9
11.3 Reproducibility.....	9
<b>12 Test report</b> .....	<b>10</b>
<b>Annex A (informative) Interlaboratory study</b> .....	<b>11</b>
<b>Bibliography</b> .....	<b>14</b>

This is a preview of ISO 11816-1:2024. [Click here to purchase the full version from the ANSI store.](#)

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document 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 the European Committee for Standardization (CEN) Technical Committee CEN/TC 302, *Milk and milk products — Methods of sampling and analysis*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement). It is being published jointly by ISO and IDF.

This fourth edition cancels and replaces the third edition (ISO 11816-1 | IDF 155-1:2013), which has been technically revised.

The main changes are as follows:

- the FLM200 (which has been discontinued) has been replaced by the FLM300 version;
- the instructions for use of the instrument and the flow of those instructions have been revised in accordance with FLM300, which has an upgraded user interface and electronics (there has been no change to the assay or the test procedure with the changes to the interface and software);
- the instrument now includes the heater block which was a separate item previously.

A list of all parts in the ISO 11816 | IDF 155 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

This is a preview of ISO 11816-1:2024. [Click here to purchase the full version from the ANSI store.](#)

IDF (the International Dairy Federation) is a non-profit private sector organization representing the interests of various stakeholders in dairying at the global level. IDF members are organized in National Committees, which are national associations composed of representatives of dairy-related national interest groups including dairy farmers, dairy processing industry, dairy suppliers, academics and governments/food control authorities.

ISO and IDF collaborate closely on all matters of standardization relating to methods of analysis and sampling for milk and milk products. Since 2001, ISO and IDF jointly publish their International Standards using the logos and reference numbers of both organizations.

IDF draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IDF takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IDF had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). IDF shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

This document was prepared by the IDF *Standing Committee on Analytical Methods for Processing Aids and Indicators* and ISO Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products*. It is being published jointly by ISO and IDF.

The work was carried out by the IDF/ISO Action Team P19 of the *Standing Committee on Analytical Methods for Processing Aids and Indicators* under the aegis of its project leader Mr Rick Zampa (US).