



BSI Standards Publication

Milk-based infant formula powders — Quantification of whey protein content by sodium dodecyl sulfate-capillary gel electrophoresis (SDS-CGE)

National foreword

This British Standard is the UK implementation of ISO 23293:2020.

The UK participation in its preparation was entrusted to Technical Committee AW/5, Chemical analysis of milk and milk products.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2020
Published by BSI Standards Limited 2020

ISBN 978 0 539 03877 4

ICS 67.100.01

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 29 February 2020.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

INTERNATIONAL
STANDARD

ISO
23293

IDF 247

First edition
2020-02

Milk-based infant formula powders — Quantification of whey protein content by sodium dodecyl sulfate-capillary gel electrophoresis (SDS-CGE)

*Formules infantiles en poudre à base de lait — Quantification de la
teneur en protéine de lactosérum par électrophorèse capillaire sur gel
contenant du dodécylsulfate de sodium (SDS-CGE)*



Reference numbers
ISO 23293:2020(E)

IDF 247:2020(E)

Documents

Document Sharing Hub
© ISO and IDF 2020



COPYRIGHT PROTECTED DOCUMENT

© ISO and IDF 2020

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
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: 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
Website: www.fil-idf.org

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Reagents and materials	1
6 Apparatus	2
7 Procedure	3
7.1 Sample preparation	3
7.2 CGE analysis.....	3
7.3 Electropherogram processing.....	4
7.3.1 Electropherogram integration.....	4
7.3.2 Identification of the casein region.....	4
8 System suitability	4
9 Calculations and expression of results	5
9.1 Calculation of whey protein content.....	5
9.2 Expression of results.....	5
10 Precision	5
10.1 Interlaboratory tests.....	5
10.2 Infant formulas with a whey protein content of 40 % or more	6
10.2.1 Repeatability.....	6
10.2.2 Reproducibility.....	6
10.3 Infant formulas with a whey protein content below 40 %	6
10.3.1 Repeatability.....	6
10.3.2 Reproducibility.....	6
11 Test report	6
Annex A (informative) Example of a CGE analysis	7
Annex B (informative) Precision data	10
Bibliography	11

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.

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 documents 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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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.

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 AOAC INTERNATIONAL. It is being published jointly by ISO and IDF, and separately by AOAC INTERNATIONAL. The method described in this document is equivalent to the AOAC Official Method AOAC 2016.15: *Quantification of Whey Protein Content in Milk-Based Infant Formula Powders by Sodium Dodecyl Sulfate-Capillary Gel Electrophoresis (SDS-CGE)*, First Action 2016, Final Action 2018.

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.