

INTERNATIONAL STANDARD

ISO
1740

Second edition
1991-07-15

Milk fat products and butter — Determination of fat acidity (Reference method)

*Produits à matière grasse laitière et beurre — Détermination de l'acidité
de la matière grasse (Méthode de référence)*



Reference number
ISO 1740:1991(E)

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.

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.

International Standard ISO 1740 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, in collaboration with the International Dairy Federation (IDF) and the Association of Official Analytical Chemists (AOAC) and will also be published by these organizations.

This second edition cancels and replaces the first edition (ISO 1740:1980), the scope of which has been technically revised.

Annex A of this International Standard is for information only.

© ISO 1991

All rights reserved. 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 the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Milk fat products and butter — Determination of fat acidity (Reference method)

1 Scope

This International Standard specifies a method for the determination of the acidity of the fat contained in milk fat products (as defined in FAO/WHO Standard A-2¹⁾) and in butter.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 707:1985, *Milk and milk products — Methods of sampling*.

FAO/WHO Standard A-2, elaborated under the Code of Principles concerning milk and milk products, 8th edition, 1984, Rome, Food and Agriculture Organization of the United Nations/World Health Organization.

3 Definition

For the purposes of this International Standard, the following definition applies.

fat acidity of a milk fat product or butter: The amount of alkali required to neutralize the free fatty acids in the test portion, as determined using the method specified in this International Standard, divided by the mass of the test portion.

The fat acidity is expressed in millimoles per 100 g of fat.

NOTE 1 The following alternative methods of expression of fat acidity have been used in the past but they are no longer recommended:

- a) the number of milligrams of potassium hydroxide required to neutralize the free acids contained in 1 g of fat (equal to the acid value);
- b) the number of grams of oleic acid per 100 g of fat (equal to the percentage of free fatty acids).

4 Principle

In the particular case of butter, preliminary separation of the fat from the melted butter by centrifuging.

In an oven, filtration of the melted milk fat product or fat from butter through a filter paper.

Dissolution of the filtrate in a mixture of propan-2-ol and light petroleum, and titration with standard volumetric tetra-*n*-butyl ammonium hydroxide solution using thymol blue as indicator.

5 Reagents

All reagents shall be of recognized analytical grade.

5.1 Tetra-*n*-butyl ammonium hydroxide, $c(\text{C}_{16}\text{H}_{37}\text{NO}) = 0,1 \text{ mol/l}$, volumetric solution in propan-2-ol/methanol mixture, 3 + 1 (V/V).

NOTE 2 The concentration of the standard volumetric tetra-*n*-butyl ammonium hydroxide solution may change on storage and when being transferred to the burette. For these reasons, the actual concentration of the solution should be determined to four decimal places immediately before use by titration against a standard solution of potassium hydrogen phthalate ($\text{KHC}_8\text{H}_4\text{O}_4$) using thymol blue as indicator.

1) FAO/WHO Standard A-2, Section A for anhydrous milk fat, anhydrous butteroil and butteroil, and Section B for ghee.