International Standard 5546

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Caseins and caseinates — Determination of pH (Reference method)

Caséines et caséinates — Détermination du pH (Méthode de référence)

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5546 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in September 1976.

It has been approved by the member bodies of the following countries :

Australia
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Spain
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Turkey
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The member bodies of the following countries expressed disapproval of the document on technical grounds :

New Zealand
United Kingdom

NOTE — The method specified in this International Standard has been developed jointly with the IDF (International Dairy Federation) and the AOAC (Association of Official Analytical Chemists, U.S.A.). The text as approved by the above organizations will also be published by FAO/WHO (Code of Principles concerning Milk and Milk Products and Associated Standards), by the IDF and by the AOAC (Official Methods of Analysis).

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Caseins and caseinates — Determination of pH (Reference method)

1 Scope and field of application

This International Standard specifies a reference method for the determination of the pH of all types of casein (acid caseins and rennet caseins) and of caseinates.

2 References

ISO/R 707, *Milk and milk products — Sampling.*

ISO 3310/1, *Test sieves — Technical requirements and testing — Part 1 : Metal wire cloth.*

3 Definition

pH of caseins and caseinates : The pH, at 20 °C, of an aqueous extract of casein or an aqueous solution of caseinate, as determined by the procedure described in this International Standard.

4 Principle

Electrometric determination of the pH of an aqueous extract of casein or an aqueous solution of caseinate, using a pH meter.

5 Reagents

The reagents shall be of recognized analytical grade. Any water used in their preparation and the water used in the determination (8.2) shall be recently distilled water that has been protected from carbon dioxide absorption.

5.1 Buffer solutions, for calibration of the pH meter (6.2).

Two standard buffer solutions with pH values at 20 °C which are known to the second decimal place and will bracket the pH value of the sample under test, for example phthalate buffer solution of pH approximately 4 and a borax buffer solution of pH approximately 9. In addition, a phosphate buffer solution of pH approximately 7 may be used.

6 Apparatus

6.1 Balance, accuracy 0,1 g.

6.2 pH meter, minimum sensitivity 0,05 pH unit, with a suitable glass electrode and a calomel or other reference electrode.

6.3 Thermometer, accuracy 0,5 °C.

6.4 Conical flask, capacity 100 ml, fitted with a ground glass stopper.

6.5 Beaker, capacity 50 ml.

6.6 Grinding device, for grinding the laboratory sample, if necessary (see 8.1.4), without development of undue heat and without loss or absorption of moisture. A hammer-mill shall not be used.

6.7 Test sieve, wire cloth, diameter 200 mm, nominal size of aperture 500 µm, with receiver, complying with ISO 3310/1.

6.8 Mixer.

6.9 Beaker, for the mixer (6.8), of at least 250 ml capacity.

7 Sampling

See ISO/R 707.

8 Procedure

8.1 Preparation of the test sample

8.1.1 Thoroughly mix the laboratory sample by repeatedly shaking and inverting the container (if necessary, after having transferred all of the laboratory sample to an air-tight container of sufficient capacity to allow this operation to be carried out).

8.1.2 Transfer about 50 g of the thoroughly mixed laboratory sample to the test sieve (6.7).

8.1.3 If the 50 g portion directly passes or almost completely passes the sieve, use for the determination the sample as prepared in 8.1.1.