

BS EN ISO 12779:2013



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Lactose — Determination of water content — Karl Fischer method

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National foreword

This British Standard is the UK implementation of EN ISO 12779:2013. It is identical to ISO 12779:2011. It supersedes BS ISO 12779:2011, which is withdrawn.

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.

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Amendments/corrigenda issued since publication

Date	Text affected
30 June 2013	This corrigendum renumbers BS ISO 12779:2011 as BS EN ISO 12779:2013

English Version

Lactose - Determination of water content - Karl Fischer method
(ISO 12779:2011)

Lactose - Détermination de la teneur en eau - Méthode de
Karl Fischer (ISO 12779:2011)

Lactose - Bestimmung des Wassergehaltes - Karl-Fischer-
Verfahren (ISO 12779:2011)

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Foreword

The text of ISO 12779:2011 has been prepared by Technical Committee ISO/TC 34 "Food products" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 12779:2013 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of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

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Endorsement notice

The text of ISO 12779:2011 has been approved by CEN as EN ISO 12779:2013 without any modification.

Lactose — Determination of water content — Karl Fischer method

1 Scope

This International Standard specifies a method for the determination of the water content of lactose by Karl Fischer (KF) titration.

2 Principle

The test sample is directly titrated with a commercially available two-component Karl Fischer reagent. The water content is calculated from the amount of reagent used.

Titration at a temperature of approximately 40 °C gives shorter titration times and sharper end points. Only at this or higher temperatures is the use of a one-component Karl Fischer reagent (3.1) recommended.

3 Reagents

Use only reagents of recognized analytical grade, unless otherwise specified, and only distilled or demineralized water or water of equivalent purity. Avoid absorption of moisture from the environment.

3.1 Karl Fischer (KF) reagent¹⁾ The KF reagent is a commercially available pyridine-free two-component reagent consisting of a titration component (3.2) and a solvent component (3.3). The titration component (3.2) is a methanolic solution of iodine and the solvent component (3.3) is a methanolic solution of sulfur dioxide and an appropriate base (e.g. imidazole).

Alternatively, a pyridine-free one-component KF reagent can also be used which only consists of a titration component. The titration component (3.2) is a solution of iodine, sulfur dioxide and an appropriate base (e.g. imidazole) in a suitable solvent (e.g. diethylene glycol monoethyl ether). The solvent component (3.3) is methanol (3.5). This combination of a one-component titration reagent and methanol is only recommended if the titration is carried out at a temperature of approximately 40 °C or higher.

3.2 Titration component. The titration component of the KF reagent (3.1) shall have a water equivalent of approximately 2 mg/ml of water.

A KF reagent with a water equivalent of approximately 5 mg/ml of water is also possible if a KF apparatus with a burette of capacity 5 ml is used (4.1).

3.3 Solvent component. The solvent component of the KF reagent as specified in 3.1.

3.4 Water standard, $w(\text{H}_2\text{O}) = 10 \text{ mg/g}$.

1) Hydranal[®]-Titrant 2/Hydranal[®]-Solvent from Sigma-Aldrich and apura[®] Titrant 2/apura[®] Solvent from Merck are examples of commercially available two-component systems. Hydranal[®]-Composite 2 from Sigma-Aldrich and apura[®] CombiTitrant 2 from Merck are examples of commercially available one-component reagents. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO and IDF of these products.