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

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 12779:2013 sisaldab Euroopa standardi EN ISO 12779:2013 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 12779:2013 consists of the English text of the European standard EN ISO 12779:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 29.05.2013.	Date of Availability of the European standard is 29.05.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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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)

This European Standard was approved by CEN on 16 May 2013.

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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of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.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) reagent[1)]. 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, $w(H_2O)$ = 10 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.