

## **Milk - Determination of nitrogen content - Part 1: Kjeldahl method**

Milk - Determination of nitrogen content - Part 1:  
Kjeldahl method

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 8968-1:2002 sisaldab Euroopa standardi EN ISO 8968-1:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 16.05.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 8968-1:2002 consists of the English text of the European standard EN ISO 8968-1:2001.</p> <p>This document is endorsed on 16.05.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p><b>Käsitlusala:</b> This part of EN ISO 8968/IDF 20 specifies a method for the determination of the nitrogen content of liquid milk, whole or skimmed, by the Kjeldahl principle.</p>	<p><b>Scope:</b> This part of EN ISO 8968/IDF 20 specifies a method for the determination of the nitrogen content of liquid milk, whole or skimmed, by the Kjeldahl principle.</p>
--	--

**ICS** 67.100.10

**Võtmesõnad:** chemical analysis and testin, dairy analysis, definition, definitions, determination of content, food inspection, food products, foodstuff, kjeldahl, laboratory tests, milk, milk products, nitrogen, proteins, sampling, sampling methods, testing, titration

**English version**

**Milk – Determination of nitrogen content**

**Part 1: Kjeldahl method  
(ISO 8968-1 : 2001)**

Lait – Détermination de la teneur en  
azote – Partie 1: Méthode Kjeldahl  
(ISO 8968-1 : 2001)

Milch – Bestimmung des Stickstoff-  
gehalts – Teil 1: Kjeldahl-Verfahren  
(ISO 8968-1 : 2001)

This European Standard was approved by CEN on 2001-12-15.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Management Centre: rue de Stassart 36, B-1050 Brussels**

## Foreword

International Standard

ISO 8968-1 : 2001 Milk – Determination of nitrogen content – Part 1: Kjeldahl method, which was prepared by ISO/TC 34 'Agricultural food products' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 302 'Milk and milk products – Methods of sampling and analysis', the Secretariat of which is held by NNI, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by June 2002 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 8968-1 : 2001 was approved by CEN as a European Standard without any modification.

## Contents

Page

Foreword.....	2
1 Scope .....	3
2 Normative reference .....	3
3 Term and definition .....	3
4 Principle.....	3
5 Reagents.....	4
6 Apparatus .....	5
7 Sampling.....	5
8 Preparation of test sample.....	6
9 Procedure .....	6
9.1 Test portion and pretreatment .....	6
9.2 Determination.....	6
9.3 Blank test.....	7
9.4 Recovery tests .....	8
10 Calculation and expression of results.....	8
10.1 Calculation of nitrogen content .....	8
10.2 Calculation of crude protein content.....	9
11 Precision.....	9
11.1 Interlaboratory test .....	9
11.2 Repeatability .....	10
11.3 Reproducibility.....	10
12 Test report .....	10
Annex A (informative) Modified procedure for analysis of other milk products when a separate standard for that product does not exist .....	11
Bibliography.....	12

**WARNING** — The use of this part of ISO 8968 | IDF 20 may involve the use of hazardous materials, operations, and equipment. This standard does not purport to address all the safety risks associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and healthy practices and determine the applicability of local regulatory limitations prior to use.

## 1 Scope

This part of ISO 8968 | IDF 20 specifies a method for the determination of the nitrogen content of liquid milk, whole or skimmed, by the Kjeldahl principle.

## 2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO 8968 | IDF 20. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 8968 | IDF 20 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 385-1, *Laboratory glassware — Burettes — Part 1: General requirements*

## 3 Term and definition

For the purposes of this part of ISO 8968 | IDF 20, the following term and definition apply.

### 3.1

#### **nitrogen content**

mass fraction of nitrogen determined by the procedure specified in this part of ISO 8968 | IDF 20

**NOTE** The nitrogen content is expressed as a percentage by mass.

## 4 Principle

A test portion is digested with a mixture of concentrated sulfuric acid and potassium sulfate, using copper(II) sulfate as a catalyst to thereby convert organic nitrogen present to ammonium sulfate. The function of the potassium sulfate is to elevate the boiling point of the sulfuric acid and to provide a stronger oxidizing mixture for digestion. Excess sodium hydroxide is added to the cooled digest to liberate ammonia. The liberated ammonia is distilled into excess boric acid solution then titrated with hydrochloric acid. The nitrogen content is calculated from the amount of ammonia produced.