

# SLOVENSKI STANDARD

## SIST-TS CEN ISO/TS 16634-2:2010

01-januar-2010

Food products - Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content - Part 2: Cereals, pulses and milled cereal products (ISO/TS 16634-2:2009)

Lebensmittelerzeugnisse - Bestimmung des Gehaltes an Gesamtstickstoff mit dem Verbrennungsverfahren nach Dumas und Berechnung des Gehaltes an Rohprotein - Teil 2: Getreide, Hülsenfrüchte und gemahlene Getreideerzeugnisse (ISO/TS 16634-2:2009)

**STANDARD PREVIEW**

Produits alimentaires - Détermination de la teneur en azote total par combustion selon le principe Dumas et calcul de la teneur en protéines brutes - Partie 2: Céréales, légumineuses et produits céréaliers de mouture (ISO/TS 16634-2:2009)

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Food products - Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content - Part 2: Cereals, pulses and milled cereal products (ISO/TS 16634-2:2009)

**Ta slovenski standard je istoveten z: CEN ISO/TS 16634-2:2009**

**ICS:**

67.050	Splošne preskusne in analizne metode za živilske proizvode	General methods of tests and analysis for food products
67.060	Žitna zrna, stročnice in žitni izdelki	Cereals, pulses and derived products

**SIST-TS CEN ISO/TS 16634-2:2010 en,fr,de**

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**Food products - Determination of the total nitrogen content by  
combustion according to the Dumas principle and calculation of  
the crude protein content - Part 2: Cereals, pulses and milled  
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Produits alimentaires - Détermination de la teneur en azote  
total par combustion selon le principe Dumas et calcul de la  
teneur en protéines brutes - Partie 2: Céréales,  
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Lebensmittelerzeugnisse - Bestimmung des Gehaltes an  
Gesamtstickstoff mit dem Verbrennungsverfahren nach  
Dumas und Berechnung des Gehaltes an Rohprotein - Teil  
2: Getreide, Hülsenfrüchte und gemahlene  
Getreideerzeugnisse (ISO/TS 16634-2:2009)

This Technical Specification (CEN/TS) was approved by CEN on 24 August 2009 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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## Foreword

This document (CEN ISO/TS 16634-2:2009) has been prepared by Technical Committee CEN/TC 338 "Cereal and cereal products", the secretariat of which is held by AFNOR, in collaboration with Technical Committee ISO/TC 34 "Food products".

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**Food products — Determination of the  
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Part 2:

**Cereals, pulses and milled cereal  
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*Produits alimentaires — Détermination de la teneur en azote total par  
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## ISO/TS 16634-2:2009(E)

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## ISO/TS 16634-2:2009(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TS 16634-2 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 34, *Food products*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 16634 consists of the following parts, under the general title *Food products — Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content*:

- *Part 1: Oilseeds and animal feeding stuffs*
- *Part 2: Cereals, pulses and milled cereal products* [Technical Specification]

## Introduction

For a long time, the Kjeldahl method has been the most frequently used method for the determination of the protein content of food products. However, in recent years, the Kjeldahl method has increasingly been replaced by the Dumas method, which is faster and does not use dangerous chemicals. Although the principles of the two methods are different, both measure the nitrogen content of the product. Nitrogen content can be converted into protein content by using an appropriate factor. The value of this factor varies depending on the relative amounts of different proteins and their amino-acid composition in a given product.

Neither the Dumas nor the Kjeldahl method distinguishes between protein and non-protein nitrogen. In most cases, results obtained by the Dumas method are slightly higher than those of the Kjeldahl method. This is due to the fact that the Dumas method measures almost all of the non-protein nitrogen, whereas the Kjeldahl method measures only a part of it.

Taking into consideration the fact that the protein content of a product calculated by both methods only approximates to the true value, it is a matter of discretion which one is accepted. The most appropriate solution should be the use of a second factor for the elimination of the systematic error caused by the non-protein nitrogen content of the different products. However, this second factor has to be determined for each product, like the existing factors which indicate the ratio of the protein content to the nitrogen content.

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