SLOVENSKI STANDARD
SIST EN 18198:2026

01-julij-2026

Alge in izdelki iz alg - Merjenje vsebnosti dušika in izračun vsebnosti beljakovin v mikro- in makroalgah

Algae and algae products - Nitrogen content measurement and protein content calculation for micro- and macroalgae

Algen und Algenprodukte - Messung des Stickstoffgehaltes und Berechnung des Proteingehaltes von Mikro- und Makroalgen

Algues et produits à base d'algues - Mesure de la teneur en azote et calcul de la teneur en protéines des micro et macroalgues

Ta slovenski standard je istoveten z: **EN 18198:2026**

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13.020.55	Biološki izdelki	Biobased products

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English Version

Algae and algae products - Nitrogen content measurement and protein content calculation for micro- and microalgae

Algues et produits à base d'algues - Mesure de la teneur en azote et calcul de la teneur en protéines des micro et macroalgues

Algen und Algenprodukte - Messung des Stickstoffgehaltes und Berechnung des Proteingehaltes von Mikro- und Makroalgen

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 18198:2026) has been prepared by Technical Committee CEN/TC 454 “Algae and algae products”, 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of an identical text or by endorsement, at the latest by November 2026, and conflicting national standards shall be withdrawn at the latest by November 2026.

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

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

This document has been prepared by the experts of CEN/TC 454 'Algae and algae products'.

The European Committee for Standardization (CEN) was requested by the European Commission (EC) to draft European standards or European standardization deliverables to support the implementation of Article 3 of Directive 2009/28/EC for algae and algae-based products or intermediates.

This request, presented as Mandate M/547, also contributes to the Communication on “Innovating for Sustainable Growth: A Bio economy for Europe”.

The former working group CEN Technical Board Working Group 218 “Algae”, was created in 2016 to develop a work programme as part of this Mandate. The technical committee CEN/TC 454 'Algae and algae products' was established to carry out the work programme that will prepare a series of standards.

The interest in algae and algae-based products or intermediates has increased significantly in Europe as a valuable source including but not limited to, carbohydrates, proteins, lipids, and several pigments. These materials are suitable for use in a wide range of applications from food and feed purposes to other sectors, such as textile, cosmetics, biopolymers, biofuel, fertilizers and biostimulants. Standardization was identified as having an important role in order to promote the use of algae and algae products.

The work of CEN/TC 454 should improve the reliability of the supply chain, thereby improving the confidence of industry and consumers in algae, which include macroalgae, microalgae, cyanobacteria, Labyrinthulomycetes, algae-based products or intermediates and will promote and support commercialisation of the European algae industry.

Determining the nitrogen content of algae and algae products is an important method in the algae industry. It is needed to calculate protein content, biomass gross composition, nutritional value, and also to evaluate mass balances along algae farming.

The goal of this document is to give algae producers and algae products industries recommendations for analytical methods for nitrogen content in compliance with food and feed regulations [1]. This document, based on EN ISO 5983-1:2005 *Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content — Part 1: Kjeldahl method* and EN ISO 16634-2:2016, *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*, demonstrates the suitability of both methods for the determination of nitrogen in micro- and macroalgae and highlight potential differences between the two methods. This document also provides recommendations for the calculation of protein content and guidance to establish accurate nitrogen to protein conversion factors in conjunction with total amino acid analyses according to EN 18197:2026, *Algae and algae products — Determination of the amino acid profile of micro- and macroalgae* when required.

1 Scope

This document describes the application of Kjeldahl and Dumas methods for the determination of nitrogen content in algae and their relevant products.

The method was initially tested and evaluated on the algae species *Nannochloropsis* sp. and *Palmaria palmata*. The study validated this document for both algae species. This method can also be used for other algae species.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 17399, *Algae and algae products — Vocabulary*

EN 17605:2022, *Algae and algae products — Methods of sampling and analysis — Sample treatment*

3 Terms and definitions

For the purposes of this document, the terms and definitions in EN 17399 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
Kjeldahl nitrogen content
mass fraction of the Kjeldahl nitrogen content in the sample

Note 1 to entry: Determined by the procedure specified in Clause 5.

Note 2 to entry: Unless otherwise specified, the nitrogen content is expressed on *as is* basis, not on dry weight.

3.2
Dumas total nitrogen content
mass fraction of the total nitrogen content in the sample

Note 1 to entry: Determined by the procedure specified in Clause 6.

Note 2 to entry: Unless otherwise specified, the nitrogen content is expressed on *as is* basis, not on dry weight.

3.3
crude protein content
nitrogen content (either Kjeldahl or Dumas) multiplied by a conversion factor

Note 1 to entry: The nitrogen content measurement method and the conversion factor shall be specified.