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Responsible committee: W/- Consumer Products and Services Sector Policy and Strategy Committee

Interested committees:

Title: Draft BS EN 18198 BS Algae and algae products - Nitrogen content measurement and protein content calculation for micro- and microalgae.

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
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- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

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Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

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

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 454.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 18198:2025) has been prepared by Technical Committee CEN/TC 454 “Algae and algae products”, the secretariat of which is held by NEN.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

Introduction

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

The European Committee for Standardisation (CEN) was requested by the European Commission (EC) to draft European standards or European standardisation 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/5471, 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. Standardisation 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* 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 prEN 18197:2025, *Algae and algae products — Determination of the amino acid profile* 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, *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 terminological 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.