



# SLOVENSKI STANDARD SIST EN 17605:2022

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## Alge in izdelki iz alg - Metode vzorčenja in analize - Obdelava vzorca

Algae and algae products - Methods of sampling and analysis - Sample treatment

Algen und Algenprodukte - Methoden zur Probeentnahme und Analyse -  
Probebehandlung

Algues et produits à base d'algues - Méthodes d'échantillonnage et d'analyse -  
Traitement des échantillons

Ta slovenski standard je istoveten z: **EN 17605:2022**

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English Version

## Algae and algae products - Methods of sampling and analysis - Sample treatment

Algues et produits à base d'algues - Méthodes d'échantillonnage et d'analyse - Traitement des échantillons

Algen und Algenprodukte - Methoden zur Probeentnahme und Analyse - Probebehandlung

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

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## European foreword

This document (EN 17605:2022) 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of an identical text or by endorsement, at the latest by November 2022, and conflicting national standards shall be withdrawn at the latest by November 2022.

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 mandate given to CEN by the European Commission and the European Free Trade Association.

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.

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## 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 products.

This request, presented as Mandate M/547<sup>1</sup>, 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 products 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 and fertilizer/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 and algae products and will promote and support commercialisation of the European algae industry.

This document has been developed with the aim to enable laboratories to conduct a standardized procedure for sample preparation to be used for analysing samples of algae and algae products.

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<sup>1</sup> Available at <http://ec.europa.eu/growth/tools-databases/mandates/index.cfm?fuseaction=refSearch.search#>

## 1 Scope

This document specifies the sample preparation of dry and wet samples of algae and algae products. This document enables laboratories analysing algae samples to report accurate dry weight percentages and to obtain representative samples possible for further examination.

## 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 17399:2020, *Algae and algae products - Terms and definitions*

EN ISO 24333:2009, *Cereals and cereal products — Sampling*

EN ISO 5667-1:2006, *Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 17399:2020 and the following apply.

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

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

### 3.1 lot

quantity of material that is assumed to be of the same production process and represented by specified sampling rules

[SOURCE: EN ISO 6498:2012, definition 2.1.1]

### 3.2 laboratory sample

sample as prepared (from the lot) for sending to the laboratory and intended for inspection or testing

[SOURCE: EN ISO 6498:2012, definition 2.1.2]

### 3.3 test sample

subsample or sample prepared from the laboratory sample and from which test portions will be taken

[SOURCE: EN ISO 6498:2012, definition 2.1.3]

### 3.4 test portion

quantity of material drawn from the test sample (or from the laboratory sample if both are the same)

[SOURCE: EN ISO 6498:2012, definition 2.1.4]

**EN 17605:2022 (E)****3.5****reserve sample**

material left over from the laboratory sample when divided or subsampled test samples have been taken and on which no further particle size reduction is done

[SOURCE: EN ISO 6498:2012, definition 2.1.5, modified – the note is left out]

**3.6****sample**

laboratory sample, a test sample, a test portion or a reserve sample as described in (3.2), (3.3), (3.4), (3.5)

**3.7****dry sample**

sample with a moisture content  $\leq 15$  % of the total mass

**3.8****wet sample**

sample with a moisture content  $> 15$  % of the total mass

**3.9****homogeneity**

degree to which a property or a constituent is uniformly distributed throughout a quantity of material

Note 1 to entry: Homogeneity may be considered to having been achieved in a practical sense when the sampling error of the processed portion is negligible compared to the total error of the measurement system. Since homogeneity depends on the size of the units under consideration, a mixture of two materials may be inhomogeneous at the molecular or atomic level, but sufficiently homogeneous at the particulate level. However, uniform visual appearance does not ensure compositional homogeneity.

[SOURCE: EN ISO 6498:2012, definition 2.4.1]

**3.10****homogenization**

procedure to assure the homogeneity of the sample, including coarse grinding, fine grinding, mixing, agitating, blending and pulverization

**3.11****partial drying****drying**

drying procedure for wet samples, in which the sample is carefully dried to allow subsequent sample preparation procedures to be applied

Note 1 to entry: Partial drying can be performed by oven drying or freeze drying and is presented in % moisture content reduction.

**3.12****coarse grinding**

first grinding step of the whole sample when the laboratory sample contains large lumps or when its particle size is above about 6 mm before mass reduction

Note 1 to entry: Coarse grinding is a special kind of particle size reduction that ensures homogeneity of the laboratory sample for subsampling purposes.

[SOURCE: EN ISO 6498:2012, definition 2.4.3]



**3.13****fine grinding**

grinding procedure for reducing the particle size to the requested size  $<500 \mu\text{m}$ , which is achieved by chopping, crushing, cutting, macerating, milling (grinding), pressing to obtain a homogeneous test sample for further analysis

**3.14****subsampling (splitting)**

dividing the pre-treated and homogenized laboratory sample into the test sample and the reserve sample

Note 1 to entry: After subsampling (splitting), all subsamples should have the same properties as the original laboratory sample.

Note 2 to entry: Definition is similar to definition of mass reduction (EN ISO 6498:2012).

**3.15****true value**

value which would be obtained under ideal measuring conditions where no errors occur

**3.16****moisture content****loss on drying**

mass volatile components of the sample lost after drying under test conditions / initial mass

**3.17****dry weight (d.w.)**

mass corrected for 100 % dry matter (i.e. a moisture content of 0 %)

**3.18****parameter**

analyte or constituent or microorganism for which the sample is to be analysed by microscopic, microbiological, biological or chemical procedures

[SOURCE: EN ISO 6498:2012, definition 2.2.1]

**3.19****stable parameter**

analyte or constituent or microorganism which does not degrade during sample preparation on common handling or storage at room temperatures of 20 °C to 25 °C

[SOURCE: EN ISO 6498:2012, definition 2.2.1.1]

**3.20****unstable parameter**

analyte or constituent or microorganism which degrades during sample preparation on common handling or storage at room temperatures of 20 °C to 25 °C because they are volatile, degradable, or sensitive to temperature, light, enzymatic degradation or chemical oxidation

[SOURCE: EN ISO 6498:2012, definition 2.2.1.2]

**EN 17605:2022 (E)****3.21****constant mass**

constant mass is reached when, during the drying process the difference between two successive weighings of the sample, first heated, then cooled to room temperature and with an interval of 1 h between them, does not exceed 0,5 % (m/m) of the last determined mass or 2 mg, whichever is the greater

[SOURCE: EN 12880:2000, definition 3.4]

NOTE The relations between the different definitions are given in Figure 1.

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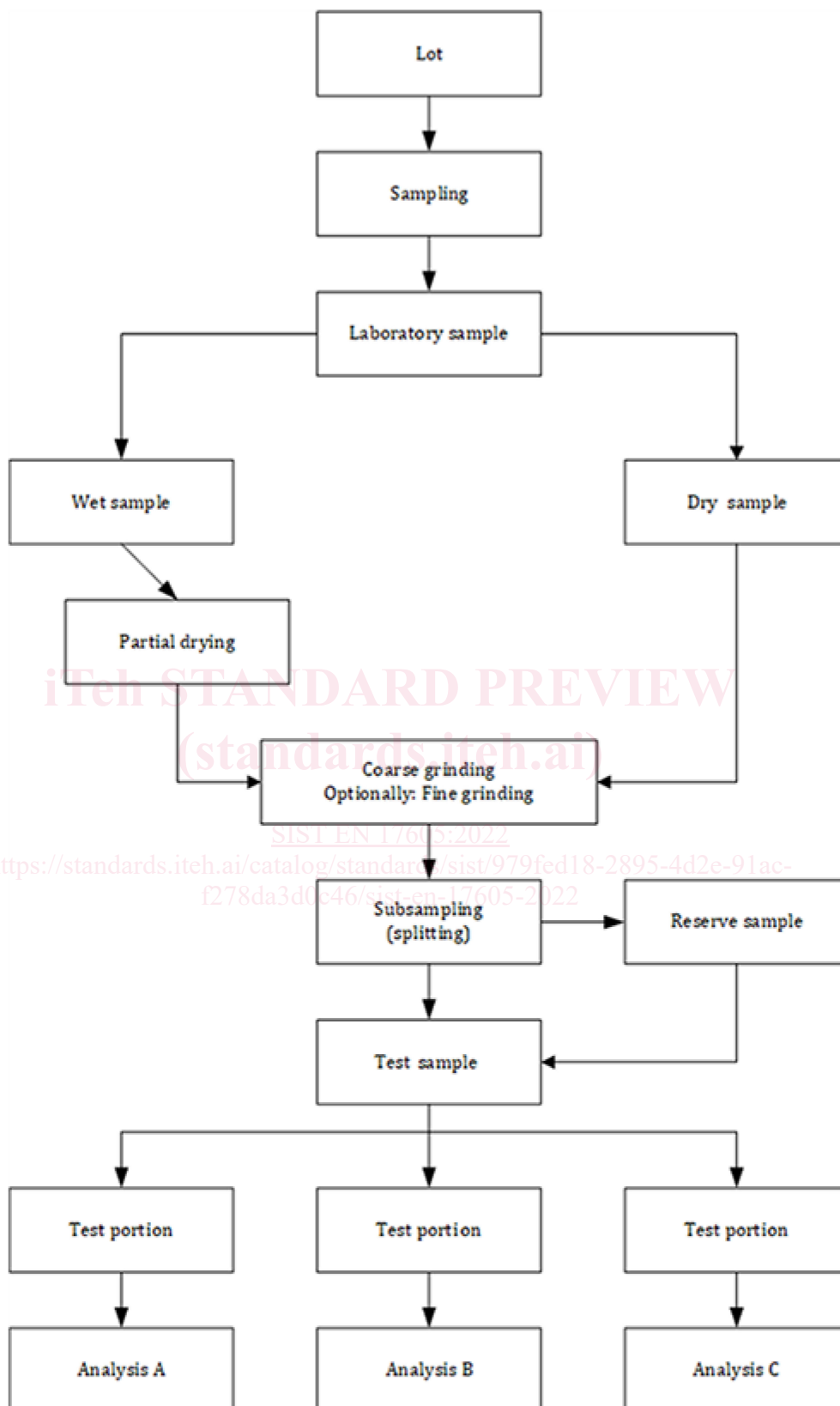


Figure 1 — Illustration of relation between the different samples types and sample preparation procedures