



SLOVENSKI STANDARD SIST EN 17399:2024

01-september-2024

Alge in izdelki iz alg - Izrazi in definicije

Algae and algae products - Terms and definitions

Algen und Algenprodukte - Begriffe

Algues et produits d'algues - Termes et définitions

Ta slovenski standard je istoveten z: EN 17399:2024

ICS:

01.040.13	Okolje. Varovanje zdravja. Varnost (Slovarji)	Environment. Health protection. Safety (Vocabularies)
13.020.55	Biološki izdelki	Biobased products

SIST EN 17399:2024

en,fr,de

EUROPEAN STANDARD

EN 17399

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2024

ICS 01.040.13; 13.020.55

Supersedes EN 17399:2020

English Version

Algae and algae products - Vocabulary

Algues et produits d'algues - Vocabulaire

Algen und Algenprodukte - Begriffe

This European Standard was approved by CEN on 3 June 2024.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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.

CEN members are the national standards bodies of 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 United Kingdom.

(<https://standards.iteh.ai>)
Document Preview

[SIST EN 17399:2024](https://standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/778d4995-e1a8-4b64-84e5-b3649a98a7bc/sist-en-17399-2024>



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

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

Contents	Page
European foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
Bibliography	26

iTeh Standards
(<https://standards.itih.ai>)
Document Preview

[SIST EN 17399:2024](#)

<https://standards.itih.ai/catalog/standards/sist/778d4995-e1a8-4b64-84e5-b3649a98a7bc/sist-en-17399-2024>

European foreword

This document (EN 17399:2024) 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 January 2025, and conflicting national standards shall be withdrawn at the latest by January 2025.

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 supersedes EN 17399:2020.

EN 17399:2024 includes the following significant technical changes with respect to EN 17399:2020:

- Previous terms and definitions were amended and enhanced according to new insights
- New terms and definitions that were not covered in the previous edition were added.

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.

EN 17399:2024 (E)

Introduction

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 standardization request 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 standardization request. 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 textiles, 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, which include macroalgae, microalgae, cyanobacteria, Labyrinthulomycetes, algae-based products or intermediates and will promote and support commercialization of the European algae industry.

This document has been developed with the aim to cover the horizontal definitions for algae and algae-based products or intermediates. Hence, other terms and definitions are given in the other standards developed by CEN/TC 454 “Algae and algae products”.

For food, feed and non-food, non-feed applications additional definitions can exist in other product specific standards.

[SIST EN 17399:2024](https://standards.iteh.ai/catalog/standards/sist/778d4995-e1a8-4b64-84e5-b3649a98a7bc/sist-en-17399-2024)

<https://standards.iteh.ai/catalog/standards/sist/778d4995-e1a8-4b64-84e5-b3649a98a7bc/sist-en-17399-2024>

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

1 Scope

This document defines the terms related to functions, products, and properties of algae and algae products. In order to better pack the methodologies, algae are regarded as a functional group of organisms consisting of microalgae, macroalgae, cyanobacteria and Labyrinthulomycetes.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminology 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 General terms

3.1.1

algae

algae products

functional group of organisms consisting of *microalgae* (3.1.22), *macroalgae* (3.1.21), *cyanobacteria* (3.1.10), *Labyrinthulomycetes* (3.1.19) and products derived thereof

Note 1 to entry: Algae and algae products can be used variously, for food, feed, chemistry, cosmetics, etc., and it can also be used as a base for energy production.

3.1.2

algae biorefinery

facility that integrates algae *biomass* (3.1.6) conversion processes and equipment to produce a spectrum of bio-based products (food, feed, chemicals, materials, fertilizers, etc.) and *bioenergy* (3.7.2) (*biofuels* (3.7.3), power and/or heat)

[SOURCE: International Energy Agency Bioenergy. Task 42 – Biorefining in a Circular Economy.]

3.1.3

algae oil

glyceridic fraction of *lipids* (3.1.20) derived from *algae* (3.1.1)

3.1.4

algae strain

population of unicellular/*pluricellular* (3.1.29) organisms of a single *algae* (3.1.1) *species* (3.1.33), all descended from the entirety/or a part of an organism, being synonymous with a monoclonal culture and a genetic representative of a single *algae* (3.1.1) *species* (3.1.33)

Note 1 to entry: This definition includes sexual and asexual reproduction.

3.1.5

artificial light

light made up of photons from a source other than the sun

EN 17399:2024 (E)

EXAMPLE Fluorescent light and LEDs.

Note 1 to entry: The energy to produce light could come from a mix of sources that can range from fossil fuels, nuclear plants and renewable and sustainable sources, such as wind, photovoltaics, *biomass* (3.1.6), etc..

Note 2 to entry: Energy consumed and emissions associated with this should be accounted for in the assessment of the sustainability.

3.1.6**biomass**

material of biological origin excluding material embedded in geological formations and/or fossilized

EXAMPLE (Whole or parts of) plants, trees, *algae* (3.1.1), marine organisms, microorganisms, animals, etc.

[SOURCE: EN 16575:2014, 2.7]

3.1.7**carbohydrate**

biomolecule consisting of carbon, hydrogen and oxygen, characterizable, in a first approximation, by the formula $(\text{CH}_2\text{O})_n$

Note 1 to entry: They include sugars, oligo- and polysaccharides as well as polyols derived.

3.1.8**contaminant**

hazardous and/or undesired substance, material or organism that can result in physical, chemical and/or biological modifications of properties

3.1.9**contamination**

presence of hazardous and/or undesired substances, materials or organisms that can result in physical, chemical and/or biological modifications of properties [7399:2024](https://standards.iteh.ai/catalog/standards/sist/778d4995-e1a8-4b64-84e5-b3649a98a7bc/sist-en-17399-2024)

<https://standards.iteh.ai/catalog/standards/sist/778d4995-e1a8-4b64-84e5-b3649a98a7bc/sist-en-17399-2024>

3.1.10**cyanobacteria**

photoautotrophic (3.1.27), *mixotrophic* (3.1.23) or *heterotrophic* (3.1.16) *prokaryotic* (3.1.30) organisms, able to obtain energy by using chromophores

3.1.11**enzyme**

biologically produced protein catalyst that accelerates the conversion of one compound (or compounds) to another (or others)

[SOURCE: EN ISO 11074:2015, 6.4.15]

3.1.12**eukaryote**

organism with a cell structure in which the nucleus is surrounded by a nuclear membrane

[SOURCE: ISO 6107:2021, 3.211]

3.1.13**fouling**

non-target organisms either on the surface or within algal *biomass* (3.1.6) (epiphytes or endophytes), including *macroalgae* (3.1.21), *microalgae* (3.1.22), bacteria, *cyanobacteria* (3.1.10), fungi, or animals, including harmless organisms and pathogens

Note 1 to entry: This also includes such organisms within production systems not directly associated with target organisms, but associated with tanks, ropes/nets, bioreactors and all *cultivation* (3.6.3) surfaces; potentially compromising quality and value including *purity* (3.1.31) and safety of target algal growth.

3.1.14**genus**

taxonomic category that ranks above *species* (3.1.33) and below family

Note 1 to entry: When using taxonomy to name an organism, the genus is used to determine the first part of its two-part name (genus and *species* (3.1.33)).

3.1.15**geographical origin of algae**

reference to the state in which the alga reached more than half of its final weight or stayed for more than half of the farming period

Note 1 to entry: In the case of *seaweeds* (3.1.32) harvested at sea, details of the flag State of the vessel that harvested those *algae* (3.1.1).

[SOURCE: Regulation (EU) 1379/2013, modified – “Member state or third country” replaced by “state”]

3.1.16**heterotrophy**

metabolism that utilizes organic compounds as energy and carbon source

Note 1 to entry: Light is not required as an energy source.

3.1.17**identification**

process for determining that an isolate belongs to one of the established taxa

[SOURCE: EN ISO 22174:2005, 3.1.9]

3.1.18**impurity**

percentage of components other than the specified component in the total amount of product

3.1.19**labyrinthulomycetes****labyrinthulea**

class of protists or chromista that produce a network of filaments or tubes and includes the family *Thraustochytriaceae* (3.1.35)

3.1.20**lipids**

class of natural organic substances characterized by very low water solubility, high organic solvents solubility, high carbon and hydrogen content, biosynthesized for energy storage and/or metabolic and structural functions

EN 17399:2024 (E)**3.1.21****macroalgae**

macroscopic *eukaryotic* (3.1.12) *pluricellular* (3.1.29) organisms composed of single differentiated cells able to obtain energy using chromophores

Note 1 to entry: Generally *pluricellular* (3.1.29), but can also be single celled.

3.1.22**microalgae**

microscopic *eukaryotic* (3.1.12) organisms composed of single differentiated cells able to obtain energy using chromophores

Note 1 to entry: Generally single celled, but can occur as filamentous or colonial.

3.1.23**mixotrophy**

metabolism that utilizes simultaneously different sources of energy and carbon

Note 1 to entry: Used by those organisms that have the ability to utilize a combination of the phototrophic and *heterotrophic* (3.1.16) metabolic pathway.

3.1.24**natural light**

light made up of photons that originate from the sun

Note 1 to entry: The light can be filtered (e.g. by wavelength) or can be redirected and focused (e.g. with mirrors and glass fibre).

3.1.25**origin of algae strain****strain origin**

registered geographical place where the algal organism was collected or genetically modified (or evolved)

Note 1 to entry: Origin of a strain which first isolation is not reported but is registered according to Regulation (EU) 2015/1866 in a collection is the location of the collection.

3.1.26**photoheterotrophy**

metabolism that utilizes light as energy source and organic compounds as carbon source

Note 1 to entry: Photoheterotrophy is a form of *mixotrophy* (3.1.23).

3.1.27**phototrophy****photoautotrophy**

metabolism that utilizes light as energy source and inorganic compounds as carbon source

3.1.28**pigment**

any colouring matter in the cells and tissues of plants

[SOURCE: ISO 5527:2015, 2.3.1.25]