SLOVENSKI STANDARD
oSIST prEN 16640:2026

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Bioizdelki - Delež biogljika - Ugotavljanje deleža biogljika z radiogljično metodo

Bio-based products - Bio-based carbon content - Determination of the bio-based carbon content using the radiocarbon method

Biobasierte Produkte - Gehalt an biobasiertem Kohlenstoff - Bestimmung des Gehalts an biobasiertem Kohlenstoff mittels Radiokarbonmethode

Produits biosourcés - Teneur en carbone biosourcé - Détermination de la teneur en carbone biosourcé par la méthode au radiocarbone

Ta slovenski standard je istoveten z: **prEN 16640**

ICS:

13.020.55	Biološki izdelki	Biobased products
71.040.40	Kemijska analiza	Chemical analysis

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NORME EUROPÉENNE

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English Version

Bio-based products - Bio-based carbon content - Determination of the bio-based carbon content using the radiocarbon method

Produits biosourcés - Teneur en carbone biosourcé - Détermination de la teneur en carbone biosourcé par la méthode au radiocarbone

Biobasierte Produkte - Gehalt an biobasiertem Kohlenstoff - Bestimmung des Gehalts an biobasiertem Kohlenstoff mittels Radiokarbonmethode

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 411.

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

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European foreword

This document (prEN 16640:2025) has been prepared by Technical Committee CEN/TC 411 “Bio-based products”, the secretariat of which is held by SIS.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 16640:2017.

prEN 16640:2025 includes the following significant technical changes with respect to EN 16640:2017:

— The saturated-absorption cavity ring-down spectroscopy (SCAR) method has been added. This includes an annex comparing the SCAR method to the accelerator mass spectrometry (AMS) method

— The beta-ionization (BI) method has been removed.

— Reference value for 100 % bio-based carbon is now taken from an ASTM standard.

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.

Introduction

Bio-based products from forestry and agriculture have a long history of application, such as paper, board and various chemicals and materials. The last decades have seen the emergence of new bio-based products in the market. Some of the reasons for the increased interest lie in the benefits of bio-based products in relation to the depletion of fossil resources and climate change. Bio-based products can also provide additional product functionalities. These developments have triggered a wave of innovation with the development of knowledge and technologies allowing new transformation processes and product development.

Acknowledging the need for common standards for bio-based products, the European Commission issued mandate M/492[1], resulting in a series of standards developed by CEN/TC 411 during 2012-2017, with a focus on bio-based products other than food, feed and biomass for energy applications. The previous version of this document (EN 16640:2017) was developed under the mandate, but this revised version was developed after the expiration of the mandate, upon the initiative of the stakeholders in CEN/TC 411.

The standards of CEN/TC 411 “Bio-based products” provide a common basis on the following aspects:

— common terminology;

— bio-based content determination;

— life cycle assessment (LCA);

— sustainability aspects; and

— declaration tools.

It is important to understand what the term bio-based product covers and how it is being used. The term ‘bio-based’ means 'derived from biomass'. Bio-based products (bottles, insulation materials, wood and wood products, paper, solvents, chemical intermediates, composite materials, etc.) are products which are wholly or partly derived from biomass. It is essential to characterize the amount of biomass contained in the product by, for instance, its bio-based content or bio-based carbon content.

The bio-based content of a product does not provide information on its environmental impact or sustainability, which can be assessed through LCA and sustainability criteria. In addition, transparent and unambiguous communication within bio-based value chains is facilitated by a harmonized framework for certification and declaration.

This document has been developed with the aim to specify the method for the determination of bio-based carbon content in bio-based products using the ^{14}C method. This method is based on the analytical test methods used for the determination of the age of objects containing carbon.

This document provides the reference test methods for laboratories, producers, suppliers and purchasers of bio-based product materials and products. It can be also useful for authorities and inspection organizations.

Part of the research leading to the previous version of this document has been performed under the European Union Seventh Framework Programme (see https://www.biobasedeconomy.eu/research/kbbpps/).

The analytical test methods specified in this document are compatible with those described in ASTM D6866.

[1] A mandate is a standardization task embedded in European trade laws. Mandate M/492 was addressed to the European Standardization bodies, CEN, CENELEC and ETSI, for the development of horizontal European Standards for bio-based products.