

Bio-based products - Bio-based content - Part 2:
Determination of the bio-based content using the
material balance method

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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|---|--|
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English Version

**Bio-based products - Bio-based content - Part 2:
Determination of the bio-based content using the material
balance method**

Produits biosourcés - Teneur biosourcée - Partie 2 :
Détermination de la teneur biosourcée à l'aide de la
méthode basée sur le bilan-matières

Biobasierte Produkte - Biobasierter Gehalt - Teil 2:
Bestimmung des biobasierten Gehalts unter
Verwendung der Materialbilanzmethode

This European Standard was approved by CEN on 24 December 2017.

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| Contents | Page |
|---|-------------|
| European foreword | 3 |
| Introduction | 4 |
| 1 Scope | 5 |
| 2 Normative references | 5 |
| 3 Terms and definitions | 5 |
| 4 Principle | 6 |
| 5 Natural products | 6 |
| 6 Rules for allocation of elements | 6 |
| 7 Procedure | 7 |
| 7.1 Information and data to be provided for calculation | 7 |
| 7.2 Calculation of the bio-based content | 7 |
| 8 Traceability system | 8 |
| 9 Validation of the calculated bio-based content | 8 |
| 10 Test report | 9 |
| Annex A (informative) Examples of determination of the bio-based content | 10 |
| A.1 EXAMPLE 1: Flexible insulation panel | 10 |
| A.2 EXAMPLE 2: Bio-based ethyl acetate | 11 |
| A.3 EXAMPLE 3: Water based decorative flat paint | 13 |
| A.4 EXAMPLE 4 : Particle boards | 14 |
| A.5 EXAMPLE 5 : Graphic paper | 15 |
| Bibliography | 16 |

European foreword

This document (EN 16785-2:2018) has been prepared by Technical Committee CEN/TC 411 “Bio-based 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of an identical text or by endorsement, at the latest by September 2018, and conflicting national standards shall be withdrawn at the latest by September 2018.

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.

EN 16785 consists of the following parts:

- EN 16785-1, *Bio-based products — Bio-based content — Part 1: Determination of the bio-based content using the radiocarbon analysis and elemental analysis*
- EN 16785-2, *Bio-based products — Bio-based content — Part 2: Determination of the bio-based content using the material balance method (the present document)*

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

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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 bio-based products' benefits in relation to the depletion of fossil resources and climate change. Bio-based products may also provide additional product functionalities. This has 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, with a focus on bio-based products other than food, feed and biomass for energy applications.

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;
- 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 may 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.

The purpose of this European Standard is to provide a method for the determination of the bio-based content of solid, liquid and gaseous products, based on the accounting of materials entering and leaving the system and on traceability of the materials during processing, to ensure the physical presence of the bio-based material in the output.

Although it is not the purpose of this method, the claimed bio-based content of the output could be validated by analysis using EN 16785-1 [1].

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

1 Scope

This part of EN 16785 specifies a method of determining the bio-based content in products using the material balance applied to a representative product batch in a production unit.

This European Standard is applicable to any solid, liquid and gaseous bio-based product containing carbon, obtained by chemical synthesis, mixing or assembling, provided that:

- for a product batch, the composition of the product and the bio-based content of each input, output and loss in the production unit are known; and
- the bio-based content of the product is verifiable by analysis.

This method incorporates only the physical parts of the input and output stream as present in the final product, and does not incorporate material inputs for the energy to be used during the production process.

This method is not needed for the determination of the bio-based content in natural products wholly derived from biomass.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16575, *Bio-based products - Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16575 and the following apply.

3.1

material balance

comparison of physical quantities, expressed by mass, of inputs and outputs for a product in the manufacturing process of this product, over a specified time period

3.2

product batch

identified collection of products, manufactured consecutively or continuously under the same conditions, using the same materials conforming to the same specification

Note 1 to entry: The product batch is defined and identified by the product manufacturer.

3.3

representative product batch

product batch assumed to have the same characteristics as the production sampled when the latter is considered as a homogeneous whole