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**Polimerni materiali - Predloga za poročanje in komuniciranje o deležu biološkega ogljika in možnostih obnavljanja biopolimerov in biopolimernih materialov - Seznam podatkov**

Plastics - Template for reporting and communication of bio-based carbon content and recovery options of biopolymers and bioplastics - Data sheet

Kunststoffe - Vorlage für die Angabe des Gehaltes an biobasiertem Kohlenstoff und der Verwertungsmöglichkeiten für Biopolymere und Biokunststoffe - Datenblatt

Plastiques - Modèle pour le rapport et la communication de la teneur en carbone biosourcé et des options de valorisations des biopolymères et bioplastiques - Fiche technique

**Ta slovenski standard je istoveten z: CEN/TS 16398:2012**

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83.080.01	Polimerni materiali na splošno	Plastics in general
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**SIST-TS CEN/TS 16398:2014**

**en,fr,de**

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**CEN/TS 16398**

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English Version

**Plastics - Template for reporting and communication of bio-based carbon content and recovery options of biopolymers and bioplastics - Data sheet**

Plastiques - Modèle pour le rapport et la communication de la teneur en carbone biosourcé et des options de valorisations des biopolymères et bioplastiques - Fiche technique

Kunststoffe - Vorlage für die Angabe des Gehaltes an biobasiertem Kohlenstoff und der Verwertungsmöglichkeiten für Biopolymere und Biokunststoffe - Datenblatt

This Technical Specification (CEN/TS) was approved by CEN on 16 July 2012 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## Foreword

This document (CEN/TS 16398:2012) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by NBN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## Introduction

CEN/TR 15932 [1] gives recommendations for the terminology and the characterisation of biopolymers and bioplastics.

Biopolymers and bioplastics can be either bio-based (based on biomass) or biodegradable in industrial composting plants, or both. Furthermore, in the biomedical sector the terms biopolymer and bioplastic mainly refer to the biological compatibility with living tissues. As a consequence, the terms "biopolymer" and "bioplastic" can identify products with very different characteristics.

The different characteristics which relate to the "bio-" prefix can thus be a potential source of confusion as recognised by CEN/TR 15392. As the result of chemical modifications or the combination with non-biodegradable parts, the biodegradable nature of the original biological raw material can be lost in the final biopolymer rendering it non-biodegradable. This is a potential problem especially for disposable products as the end-user may mistake bio-based for biodegradable products and vice-versa.

The terms biopolymer and bioplastic are not exhaustive and more detailed information needs to be declared in order to better specify the real nature and properties of each biopolymer or bioplastic.

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## 1 Scope

This Technical Specification specifies a template for reporting and communication of characteristics covering bio-based carbon content and recovery options (i.e. organic recycling, material recycling and energy recovery) of a given item in commercial business-to-business transactions by means of a specific data sheet for biopolymers and bioplastics. This Technical Specification also gives the relevant methods for the evaluation and verification of the claims.

This Technical Specification provides the principles and requirements for the communication of selected claims in the field of environmental performance and characteristics to be used with reference to items such as biopolymers, bioplastic materials, semi-finished bioplastic products and finished bioplastic products, including composites, before it is available to the end-user or consumer.

This Technical Specification is not intended for use in communicating biobased-content and recovery options in business to consumer communications

Biocompatible polymers and plastics for medical applications, covered by specific provisions, are out of the scope of this document.

**NOTE** This Technical Specification does not override, or in any way change, legally required information, claims or labelling, or any other applicable legal requirements.

## 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 13431, *Packaging — Requirements for packaging recoverable in the form of energy recovery, including specification of minimum inferior calorific value*

EN 13432, *Packaging — Requirements for packaging recoverable through composting and biodegradation — Test scheme and evaluation criteria for the final acceptance of packaging*

EN 14995, *Plastics — Evaluation of compostability — Test scheme and specifications*

CEN/TS 16137, *Plastics — Determination of the bio-based carbon content*

CEN/TS 16295, *Plastics — Declaration of the bio-based carbon content*

EN ISO 14020:2001, *Environmental labels and declarations — General principles (ISO 14020:2000)*

EN ISO 14021:2001, *Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling) (ISO 14021:1999)*

ISO 1928, *Solid mineral fuels — Determination of gross calorific value by the bomb calorimetric method, and calculation of net calorific value*

ISO 15270:2008, *Plastics — Guidelines for the recovery and recycling of plastics waste*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15270:2008 and the following apply.

**CEN/TS 16398:2012 (E)****3.1****bio-based carbon content**

amount of carbon in a sample that is of recent origin, as evidenced by its  $^{14}\text{C}$  isotope content

[SOURCE: CEN/TR 15932:2010]

Note 1 to entry: The amount of bio-based carbon in a material or product is often expressed as a percent of the weight (mass) of the total organic carbon of this material or product.

**3.2****biomass**

material of biological origin excluding material embedded in geological formation or fossilised

[SOURCE: CEN/TR 15932:2010]

**3.3****biomass content**

mass fraction of bio-based material in a sample

Note 1 to entry: Claims of biomass content are difficult to verify due to lack of standards.

[SOURCE: CEN/TR 15932:2010]

**3.4****bio-based plastic**

plastic in which constitutional units are totally or in part from biomass origin

**3.5****bio-based polymer**

polymer in which constitutional units are totally or in part from biomass origin

[SOURCE: CEN/TR 15932:2010]

Note 1 to entry: The terms biosourced, biogenic, biomass-based, and renewable based are often used as equivalent to bio-based by different communication media.

**3.6****business-to-consumer transaction**

transaction that occurs between a company and a consumer, as opposed to a transaction between companies

Note 1 to entry: The term may also describe a company that provides goods or services for consumers.

**3.7****business-to-business transaction**

transaction that occurs between a company and another company, as opposed to a transaction involving a consumer

Note 1 to entry: The term may also describe a company that provides goods or services for another company.

**4 Claims on biopolymers and bioplastics**

Several and different claims may be used in order to communicate the characteristics of biopolymers and bioplastics. The objective of this Technical Specification is to harmonise the use of some claims specified in Clause 6, which are essential to describe biopolymers and bioplastics.



## 5 Evaluation and verification of the claims

The evaluation and verification of the claims shall be in accordance with the principles given in EN ISO 14020:2001 and EN ISO 14021:2001, as follows:

- a) Principle 1: environmental labels and declarations shall be accurate, verifiable, relevant and not misleading.
- b) Principle 2: procedures and requirements for environmental labels and declarations shall not be prepared, adopted, or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade.
- c) Principle 3: environmental labels and declarations shall be based on scientific methodology that is sufficiently thorough and comprehensive to support the claim and that produces results that are accurate and reproducible.
- d) Principle 4: information concerning the procedure, methodology, and any criteria used to support environmental labels and declarations shall be available and provided upon request to all interested parties.
- e) Principle 5: the development of environmental labels and declarations shall take into consideration all relevant aspects of the life cycle of the product.
- f) Principle 6: environmental labels and declarations shall not inhibit innovation which maintains or has the potential to improve environmental performance.
- g) Principle 7: any administrative requirements or information demands related to environmental labels and declarations shall be limited to those necessary to establish conformance with applicable criteria and standards of the labels and declarations.
- h) Principle 8: the process of developing environmental labels and declarations should include an open, participatory consultation with interested parties. Reasonable efforts should be made to achieve a consensus throughout the process.
- i) Principle 9: information on the environmental aspects of products and services relevant to an environmental label or declaration shall be available to purchasers and potential purchasers from the party making the environmental label or declaration.

## 6 Data sheet for biopolymers and bioplastics

### 6.1 General rules

The claims of the characteristics of the biopolymers or bioplastics shall be provided by using a template, as shown in Annex A. This template includes three parts:

- a) identification of the plastic item;
- b) bio-based carbon content;
- c) recovery options.

Unless otherwise indicated in the template, every field shall be filled in. If information is not available or not relevant for the intended uses, an appropriate rationale shall be included.

**NOTE** For some items the requested information may be not relevant, e.g. the compostability for durable products, e.g. construction products.