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Plastics — Biobased content —

Part 4: Determination of biobased mass content

Plastiques — Teneur biosourcée —

Partie 4: Détermination de la teneur en masse biosourcée

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties*.

A list of all parts in the ISO 16620 series can be found on the ISO website.

Introduction

Increased use of biomass resources for manufacturing plastics products is effective in reducing global warming and the depletion of fossil resources.

Current plastics products are composed of biobased synthetic polymers, fossil-based synthetic polymers, natural polymers and additives that can include biobased materials.

“Biobased plastics” refer to plastics that contain materials wholly or partly of biogenic origin.

In ISO 16620 series, the “biobased content” of biobased plastics refers to the amount of the biobased carbon content, the amount of the biobased synthetic polymer content or the amount of the biobased mass content only.

This document is harmonized with EN 16785-1:2015[12].

Plastics — Biobased content —

Part 4: Determination of biobased mass content

1 Scope

This document specifies a method of determining the biobased mass content in plastics products, based on the radiocarbon analysis and elemental analysis.

This document is applicable to plastic products and plastic materials, polymer resins, monomers or additives, which are made from biobased or fossil-based constituents.

This method is applicable, provided that the plastic product contains carbon element and that a statement giving its elemental composition and its biobased mass content is available.

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.

ISO 16620-2:2015, *Plastics — Biobased content — Part 2: Determination of biobased carbon content*

3 Terms, definitions, symbols and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16620-1 apply.

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp/

3.2 Symbols

^{14}C	carbon isotope with an atomic mass of 14
C	symbol for element carbon
H	symbol for element hydrogen
N	symbol for element nitrogen
O	symbol for element oxygen
m_B	biobased mass content, expressed as a percentage of the total mass of sample
x_B	biobased carbon content, expressed as a percentage of the total mass of the sample