
**Plastics — Carbon and environmental
footprint of biobased plastics —**

**Part 2:
Material carbon footprint, amount
(mass) of CO₂ removed from the
air and incorporated into polymer
molecule**

*Plastiques — Empreinte carbone et environnementale des plastiques
biosourcés —*

*Partie 2: Empreinte carbone des matériaux, quantité (masse) de CO₂
captée dans l'air et incorporée dans les molécules de polymères*



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Published in Switzerland

Contents

Page

| | |
|--|-----------|
| Foreword | iv |
| Introduction | v |
| 1 Scope | 1 |
| 2 Normative references | 1 |
| 3 Terms, definitions, symbols and abbreviated terms | 1 |
| 3.1 Terms and definitions..... | 1 |
| 3.2 Symbols..... | 2 |
| 3.3 Abbreviated terms..... | 2 |
| 4 Application | 2 |
| 5 Material carbon footprint | 2 |
| 5.1 Principle..... | 2 |
| 5.2 Determination of the biobased carbon content..... | 2 |
| 5.3 Determination or calculation of biobased carbon content on a mass base..... | 2 |
| 5.4 Calculation of the amount (mass) of CO ₂ removed from the air and incorporated into 1 kg of the polymer..... | 3 |
| 5.4.1 Calculation from biobased carbon content on a mass base..... | 3 |
| 5.4.2 Calculation from biobased synthetic polymer content..... | 3 |
| Annex A (informative) Calculation of the amount of CO₂ removed from the air for each polymer | 4 |
| Annex B (informative) Value of equivalent emissions in typical activities | 7 |
| Bibliography | 8 |

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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).

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For an explanation of the voluntary nature of standards, 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 14, *Environmental aspects*.

A list of all parts in the ISO 22526 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Increased use of biomass resources for manufacturing plastic products can be effective in reducing global warming and the depletion of fossil resources.

Current plastic 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.

Plastics — Carbon and environmental footprint of biobased plastics —

Part 2:

Material carbon footprint, amount (mass) of CO₂ removed from the air and incorporated into polymer molecule

1 Scope

This document defines the material carbon footprint as the amount (mass) of CO₂ removed from the air and incorporated into plastic, and specifies a determination method to quantify it.

This document is applicable to plastic products, plastic materials and polymer resins that are partly or wholly based on biobased constituents.

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 472, *Plastics — Vocabulary*

ISO 16620-1, *Plastics — Biobased content — Part 1: General principles*

ISO 16620-2:2019, *Plastics — Biobased content — Part 2: Determination of biobased carbon content*

ISO 16620-3:2015, *Plastics — Biobased content — Part 3: Determination of biobased synthetic polymer content*

ISO 16620-4, *Plastics — Biobased content — Part 4: Determination of biobased mass content*

ISO 16620-5, *Plastics — Biobased content — Part 5: Declaration of biobased carbon content, biobased synthetic polymer content and biobased mass 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 472, ISO 16620-1, ISO 16620-2, ISO 16620-3, ISO 16620-4 and ISO 16620-5 apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>