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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 41638.3-2023

**Plastics - Carbon and environmental footprint of biobased
plastics - Part 3: Process carbon footprint - Requirements and
guidelines for quantification**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents"

to be drafted:

This document is part 3 of GB/T 41638 "Carbon Footprint and Environmental Footprint of Bio-based Plastics": GB/T 41638 has

The following parts were released:

--- Part 1: General principles;

--- Part 2: Carbon footprint of materials The amount (mass) of CO₂ incorporated into polymer molecules from the air;

--- Part 3: Process carbon footprint quantification requirements and guidelines:

This document is equivalent to ISO 22526-3:2020 "Carbon and environmental footprint of plastic bio-based plastics - Part 3: Process carbon footprint

Traces, Quantification Requirements and Guidelines":

The following minimal editorial changes have been made to this document:

--- In order to coordinate with the existing standard, the name of the standard is changed to "The carbon and environmental footprint of plastic bio-based plastics Part 3: process

Carbon Footprint Quantification Requirements and Guidelines":

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

GB/T 41638 "Carbon Footprint and Environmental Footprint of Bio-based Plastics" is proposed to be composed of five parts:

--- Part 1: General: The purpose is to provide information and guidance for life cycle assessment and application of bio-based products:

--- Part 2: Material carbon footprint The amount (mass) of CO₂ incorporated into polymer molecules from the air: determined according to test results

The biocarbon content, which is used to calculate the CO₂ reduction that can be achieved by biochar instead of petroleum carbon (material carbon footprint):

--- Part 3: Process carbon footprint quantification requirements and guidelines: Specifies the requirements for quantifying and reporting the carbon footprint of the bio-based plastics process:

--- Part 4: Environmental (total) footprint (life cycle assessment): Using the method of life cycle assessment, calculate the conversion of input materials into final products

The process carbon footprint generated during the production process enables sustainable and environmentally responsible management of carbon (carbon-based materials):

--- Part 5: Reporting and evaluation: Requirements for reporting the results of carbon and environmental footprint assessments of bio-based plastics:

Increasing the use of biomass resources in the production of plastic products can alleviate the trend of global warming and slow down the depletion of fossil resources:

At present, plastic products are mainly composed of bio-based synthetic polymers, fossil-based synthetic polymers, natural polymers and additives containing bio-based materials:

Made with additives:

Bio-based plastics are plastics that are wholly or partly derived from biomass:

Carbon and environmental footprints of plastic bio-based plastics

Part 3: Requirements and guidelines for process carbon footprint quantification

1 Scope

This document specifies the requirements and guidelines for the carbon footprint quantification report (see ISO 22526-1) of the bio-based plastics process: This document serves as

Part of the standards related to the carbon footprint of bio-based plastic products, based on ISO 14067 and life cycle assessment standards (ISO 14040 and ISO 14044) requirements:

This document applies to studies of the process carbon footprint (P-CFP) of plastic materials, i.e: the partial carbon footprint of a product, whether or not the results are intended

public:

This document provides the requirements and guidelines for the quantification of a product's partial carbon footprint (partial CFP): According to ISO 14067, use the specification in this document

According to the specific conditions and requirements specified, the carbon footprint of the process is studied as part of the carbon footprint:

This document specifies the analysis and calculation process and report content of P-CFP to ensure the transparency and credibility of the report:

Set-off does not apply to this document:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

Note: GB/T 24044-2008 Environmental Management Life Cycle Assessment Requirements and Guidelines (ISO 14044:2006, IDT)

Note: GB/T 24050-2004 Environmental Management Terminology (ISO 14050:2002, IDT)

ISO 14067:2018 Requirements and guidelines for the quantification and notification of carbon footprints of greenhouse gas products (Greenhousegases-

ISO /T S14071 Environmental management life cycle assessment key review process and

reviewer competencies: an addition to ISO 14044:2006

3 Terms, Definitions and Abbreviations

3:1 Terms and Definitions

The terms and definitions defined in ISO 14050 and ISO 14067 and the following apply to this document:

The terminology databases maintained by ISO and IEC for standardization can be found at the following URLs:

---ISO online browsing platform: <https://www.iso.org/obp>;