



NSAI
Standards

Irish Standard
I.S. EN ISO 21644:2021&LC:2021

Solid recovered fuels - Methods for the determination of biomass content (ISO 21644:2021, Corrected version 2021-03)

I.S. EN ISO 21644:2021&LC:2021

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN ISO 21644:2021&LC:2021 is the adopted Irish version of the European Document EN ISO 21644:2021, Solid recovered fuels - Methods for the determination of biomass content (ISO 21644:2021, Corrected version 2021-03)

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In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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Corrected Version

Reference: EN ISO 21644:2021

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Please include the following minor editorial correction(s) in the document related to:

the following language version(s) :

- ☒ English
- ☒ French
- ☐ German

for the following procedure :

- ☐ PQ/UQ
- ☐ Enquiry
- ☐ 2nd Enquiry
- ☐ Parallel Enquiry
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- ☐ Formal Vote
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- ☐ 2nd Parallel Formal Vote
- ☐ UAP
- ☐ TC Approval
- ☐ 2nd TC Approval
- ☐ Publication
- ☒ Parallel Publication

It has been brought to our attention that this document, issued on 2021-01-20, requires modification.

ISO has published (Corrected version 2021-03) of ISO 21644:2021.

Titles and Forewords have been updated accordingly.

Please find enclosed the updated English and French versions.

We apologise for any inconvenience this may cause.

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 21644

January 2021

ICS 75.160.10

Supersedes EN 15440:2011

English Version

**Solid recovered fuels - Methods for the determination of
biomass content (ISO 21644:2021, Corrected version
2021-03)**

Combustibles solides de récupération - Méthode de
détermination de la teneur en biomasse (ISO
21644:2021, Version corrigée 2021-03)

Feste Sekundärbrennstoffe - Verfahren zur
Bestimmung des Gehaltes an Biomasse (ISO
21644:2021, korrigierte Fassung 2021-03)

This European Standard was approved by CEN on 22 November 2020.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 31 March 2021.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 21644:2021 (E)

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European foreword

This document (EN ISO 21644:2021) has been prepared by Technical Committee ISO/TC 300 "Solid recovered materials, including solid recovered fuels" in collaboration with Technical Committee CEN/TC 343 "Solid Recovered Fuels" the secretariat of which is held by SFS.

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 July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.

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.

This document supersedes EN 15440:2011.

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Endorsement notice

The text of ISO 21644:2021, Corrected version 2021-03 has been approved by CEN as EN ISO 21644:2021 without any modification.

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INTERNATIONAL STANDARD

**ISO
21644**

First edition
2021-01

Corrected version
2021-03

Solid recovered fuels — Methods for the determination of biomass content

*Combustibles solides de récupération — Méthode de détermination de
la teneur en biomasse*



Reference number
ISO 21644:2021(E)

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ISO 21644:2021(E)

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).

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

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 300, *Solid recovered fuels*.

This corrected version of ISO 21644:2021 incorporates the following corrections:

- Correction of "4 ml l⁻¹" to "4 mol·l⁻¹" in [Annex A](#).
- Editorial corrections made to several symbols.

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

The biomass content of solid recovered fuels is relevant for the evaluation of the impact of energy production on greenhouse gas emission. Instrumental methods, wet chemical and manual procedures are available for the calculation of the renewable energy fraction. Instrumental methods are based on the determination of ^{14}C content while manual procedures are based on separation of different fractions by visual inspection. The wet chemical procedure differentiate biomass from non-biomass materials as function of the acid dissolution behaviour.

The fraction of biomass is expressed:

- by mass;
- by energy content (gross or net calorific value);
- by carbon content.

This document is primarily intended for laboratories, producers, suppliers and purchasers of solid recovered fuels, but is also useful for the authorities and inspection organizations.

Solid recovered fuels — Methods for the determination of biomass content

1 Scope

This document specifies three methods for the determination of the biomass content in solid recovered fuels: the ^{14}C content method, the selective dissolution and the manual sorting methods.

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 21637:2020, *Solid recovered fuels — Terminology, definitions and descriptions*

ISO 21645¹⁾, *Solid recovered fuels — Methods for sampling*

ISO 21646²⁾, *Combustibles solides de récupération — Préparation des échantillons*

ISO 21654³⁾, *Solid recovered fuels — Determination of calorific value*

ISO 21656⁴⁾, *Solid recovered fuels — Determination of ash content*

ISO 21663, *Solid recovered fuels — Methods for the determination of total carbon (C), hydrogen (H), nitrogen (N) and sulphur (S) by the instrumental method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21637:2020 and the following 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/>

3.1

ash content on dry basis

mass of inorganic residue remaining after ignition of a fuel under specified conditions, expressed as mass fraction in percent of the dry matter in the fuel, also includes removed ash contributors

Note 1 to entry: This is typically expressed as a percentage of the mass of dry matter in the fuel source.

Note 2 to entry: Depending on the combustion efficiency the ash may contain combustibles.

Note 3 to entry: If a complete combustion is realized, ash contains only inorganic, non-combustible components.

[SOURCE: ISO 21637:2020, 3.3]

- 1) Under preparation. Stage at the time of publication ISO/FDIS 21645.
- 2) Under preparation. Stage at the time of publication ISO/DIS 21646.
- 3) Under preparation. Stage at the time of publication ISO/FDIS 21654.
- 4) Under preparation. Stage at the time of publication ISO/FDIS 21656.

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