

This is a preview of "ISO 21644:2021". [Click here to purchase the full version from the ANSI store.](#)

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)

© ISO 2021

This is a preview of "ISO 21644:2021". [Click here to purchase the full version from the ANSI store.](#)



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of "ISO 21644:2021". [Click here to purchase the full version from the ANSI store.](#)

## Contents

	Page
Foreword .....	iv
Introduction .....	v
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Symbols and abbreviations</b> .....	<b>3</b>
<b>5 Principle</b> .....	<b>4</b>
<b>6 Determination of biomass content</b> .....	<b>4</b>
6.1 Sampling .....	4
6.2 Sample preparation .....	4
6.3 Applicable methods .....	4
<b>7 Expression of results</b> .....	<b>5</b>
<b>8 Performance characteristics</b> .....	<b>5</b>
<b>9 Test report</b> .....	<b>6</b>
<b>Annex A (normative) Determination of the biomass content based on the <sup>14</sup>C method</b> .....	<b>7</b>
<b>Annex B (normative) Determination of biomass content using the selective dissolution method (SDM)</b> .....	<b>25</b>
<b>Annex C (normative) Determination of biomass content using the manual sorting method (M<sub>sort</sub>)</b> .....	<b>34</b>
<b>Annex D (informative) Limitations of the determination methods</b> .....	<b>39</b>
<b>Annex E (informative) Performance data</b> .....	<b>42</b>
<b>Bibliography</b> .....	<b>45</b>

This is a preview of "ISO 21644:2021". [Click here to purchase the full version from the ANSI store.](#)

## 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](http://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](http://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](http://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<sup>-1</sup>" to "4 mol·l<sup>-1</sup>" 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](http://www.iso.org/members.html).

This is a preview of "ISO 21644:2021". [Click here to purchase the full version from the ANSI store.](#)

## 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  $^{14}\text{C}$  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.