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**Solid biofuels — Conversion of  
analytical results from one basis to  
another**

*Biocombustibles solides — Conversion de résultats analytiques d'une  
base en une autre base*



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## 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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#).

The committee responsible for this document is ISO/TC 238, *Solid biofuels*.

This second edition cancels and replaces the first edition (ISO 16993:2015), of which it constitutes a minor revision.

## Introduction

In the International Standards covering the analysis of solid biofuels, it is generally specified that the determination is intended to be carried out on the air-dried or in air-equilibrated general analysis test sample prepared according to ISO 14780. However, in making use of these analyses, it is necessary to express the results on dry basis and sometimes, also on some other basis. The bases in common use for solid biofuels are “air-dried” (sometimes stated as “as determined”), “as received” (sometimes stated “as sampled” or “as delivered”), “dry”, and “dry, ash free”.



# Solid biofuels — Conversion of analytical results from one basis to another

## 1 Scope

This International Standard gives formulae which allow analytical data relating to solid biofuels to be expressed on the different bases in common use. Consideration is given to corrections that can be applied to certain determined values for solid biofuels prior to their calculation to other bases.

In [Annex A](#), tools for integrity checks of analytical results are given. In [Annex B](#), conversion factors for calculation into other units are given. [Annex C](#) is a guideline for the use of validation parameters as can be found in ISO/TC 238 analytical standards.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16948:2015, *Solid biofuels — Determination of total content of carbon, hydrogen and nitrogen*

ISO 16994, *Solid biofuels — Determination of total content of sulphur and chlorine*

ISO 18122, *Solid biofuels — Determination of ash content*

ISO 18125<sup>1)</sup>, *Solid biofuels — Determination of calorific value*

ISO 18134-1, *Solid biofuels — Determination of moisture content — Oven dry method — Part 1: Total moisture — Reference method*

ISO 18134-2, *Solid biofuels — Determination of moisture content — Oven dry method — Part 2: Total moisture — Simplified method*

ISO 18134-3, *Solid biofuels — Determination of moisture content — Oven dry method — Part 3: Moisture in general analysis sample*

## 3 Symbols and abbreviated terms

The symbols employed in the subsequent clauses are as follows, with the suffixes “ad” (air-dried), “ar” (as received), “d” (dry), and “daf” (dry, ash free), where appropriate.

<i>A</i>	ash (percentage by mass) according to ISO 18122
<i>C</i>	total carbon content (percentage by mass) according to ISO 16948
<i>Cl</i>	total chlorine content (percentage by mass) according to ISO 16994
<i>q<sub>p,net</sub></i>	net calorific value at constant pressure (J/g) according to ISO 18125
<i>H</i>	total hydrogen content (percentage by mass) according to ISO 16948

1) To be published.