



# SLOVENSKI STANDARD SIST EN ISO 21404:2020

01-april-2020

Nadomešča:

SIST-TS CEN/TS 15370-1:2006

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**Trdna biogoriva - Določanje taljenja pepela (ISO 21404:2020)**

Solid biofuels - Determination of ash melting behaviour (ISO 21404:2020)

Biogene Festbrennstoffe - Bestimmung des Asche-Schmelzverhaltens (ISO 21404:2020)

Biocombustibles solides - Methode de détermination de la fusibilité des cendres (ISO 21404:2020)

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**ICS:**

75.160.40 Biogoriva

Biofuels

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EN ISO 21404

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Supersedes CEN/TS 15370-1:2006

English Version

## Solid biofuels - Determination of ash melting behaviour (ISO 21404:2020)

Biocombustibles solides - Methode de détermination  
de la fusibilité des cendres (ISO 21404:2020)

Biogene Festbrennstoffe - Bestimmung des Asche-  
Schmelzverhaltens (ISO 21404:2020)

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COMITÉ EUROPÉEN DE NORMALISATION  
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## European foreword

This document (EN ISO 21404:2020) has been prepared by Technical Committee ISO/TC 238 "Solid biofuels" in collaboration with Technical Committee CEN/TC 335 "Solid biofuels" the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by August 2020, and conflicting national standards shall be withdrawn at the latest by August 2020.

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.

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INTERNATIONAL  
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ISO  
21404

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**Solid biofuels — Determination of ash  
melting behaviour**

*Biocombustibles solides — Méthode de détermination de la fusibilité  
des cendres*

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## ISO 21404:2020(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](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 238, *Solid biofuels*.

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).

## Introduction

The test method described in this document provides information about fusion and melting behaviour of the composite inorganic constituents of the solid biofuel ash at high temperatures.

Ash melting is a complex process where also sintering, shrinkage and expansion or swelling can occur.

The test method is empirical. The ash used for the test is a homogeneous material, prepared from the fuel by ashing at 550 °C (alternatively, ashing temperatures of 710 °C or 815 °C may be used). The determination is performed at a controlled rate of heating in a controlled atmosphere. In contrast, under full-scale conditions, the complex processes of combustion and fusion involve heterogeneous mixtures of particles, variable heating rates and gas compositions.

The determined characteristic temperatures in the test can be used for comparison of the tendency of the ashes from different types and qualities of solid biofuels to form fused deposits or to cause bed agglomeration on heating.

The method is based on the methods described in DIN 51730:1998<sup>[1]</sup>, ISO 540:2008<sup>[2]</sup> and CEN/TS 15370-1<sup>[3]</sup>. The terms ash fusibility and ash softening are synonyms to ash melting.

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