

Tahked biokütused. Lenduvate ainete sisalduse määramine

Solid biofuels - Determination of the content of volatile matter

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Solid biofuels - Determination of the content of volatile matter

Biocombustibles solides - Méthode de détermination de la
teneur en matières volatiles

Feste Biobrennstoffe - Bestimmung des Gehaltes an
flüchtigen Substanzen

This European Standard was approved by CEN on 3 October 2009.

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Foreword

This document (EN 15148:2009) has been prepared by 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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.

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This document supersedes CEN/TS 15148:2005.

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Introduction

The volatile matter content is determined as the loss in mass, less that due to moisture, when solid biofuel is heated out of contact with air under standardised conditions. The test is empirical and, in order to ensure reproducible results, it is essential that the rate of heating, the final temperature and the overall duration of the test are carefully controlled. It is also essential to exclude air from the solid biofuel during heating to prevent oxidation. The fit of the crucible lid is therefore critical. The moisture content of the general analysis sample is determined at the same time as the volatile matter so that the appropriate correction can be made.

1 Scope

This European Standard aims to define the requirements and method used to determine the volatile matter content of solid biofuels. It is intended for persons and organisations that manufacture, plan, sell, erect or use machinery, equipment, tools and entire plants related to solid biofuels, and to all persons and organisations involved in producing, purchasing, selling and utilising solid biofuels.

The volatile matter content is determined as the loss in mass, less that due to moisture, when solid biofuel is heated out of contact with air under standardized conditions.

2 Normative references

The following referenced documents are indispensable for the application 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.

CEN/TS 14588:2003, *Solid biofuels – Terminology, definitions and descriptions*

CEN/TS 14780, *Solid biofuels — Methods for sample preparation*

EN 14774-3, *Solid biofuels — Determination of moisture content — Oven dry method — Part 3: Moisture in general analysis sample*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN/TS 14588:2003 shall apply.

4 Principle

A test portion of the general analysis sample is heated out of contact with ambient air at $(900 \pm 10) ^\circ\text{C}$ for 7 min. The percentage of volatile matter is calculated from the loss in mass of the test portion after deducting the loss in mass due to moisture.

Automatic equipment may be used when the method is validated with biomass reference samples of an adequate biomass type. This equipment shall fulfil all the requirements given in Clauses 5 to 8 regarding sample size, atmosphere, temperatures and weighing accuracy.

5 Apparatus

5.1 Furnace

The furnace shall be heated by electricity, in which a zone of uniform temperature of $(900 \pm 10) ^\circ\text{C}$ can be maintained. It may be of the stop-ended type or fitted at the back with a flue (see Figure 1, as example).

NOTE It is important for furnaces with flues that the furnace door seals well. The flue should not reach far out of the oven and should be fitted with a butterfly valve to restrict airflow through the furnace.

Its heat capacity shall be such that, with an initial temperature of $(900 \pm 10) ^\circ\text{C}$, the temperature is regained within 4 min after insertion of a cold stand and its crucibles. The temperature is measured with a thermocouple, as described in 5.2.