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SOLID BIOFUELS - DETERMINATION OF TOTAL CONTENT OF SULPHUR AND CHLORINE

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English Version

Solid Biofuels - Determination of total content of sulphur and chlorine

Biocombustibles solides - Détermination de la teneur en chlore et en soufre

Feste Biobrennstoffe - Bestimmung des Gesamtgehaltes an Schwefel und Chlor

This Technical Specification (CEN/TS) was approved by CEN on 22 November 2005 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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Foreword

This Technical Specification (CEN/TS 15289:2006) has been prepared by Technical Committee CEN/TC 335 “Solid biofuels”, the secretariat of which is held by SIS.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this CEN Technical Specification: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

Sulphur and chlorine are present in solid biofuels in varying concentrations. During the combustion process they are usually converted to sulphur-oxides and chlorides. The presence of these elements and their reaction products may contribute significantly to corrosion and to environmentally harmful emissions.

Chlorine may be present in different organic and inorganic compounds and should exceed or equal the water soluble amount that can be determined by CEN/TS 15105:2005.

Oxygen combustion in a closed oxygen bomb is the preferred method to digest biomass samples. Decomposition in closed vessels is an appropriate alternative method. Other analytical techniques (e.g. high temperature combustion in a tube furnace, Wickbold or Schöninger combustion, Eschka method) may also be used. The determination of the resultant chlorine and sulphur compounds can be done by different techniques, e.g. ion chromatography, ICP, titrimetry.

Automatic equipment and alternative methods may be used when these methods are validated with biomass reference samples of an adequate type and also meet the requirements of Clause 10.

A list with typical sulphur and chlorine contents of biofuels can be found in Annex C of CEN/TS 14961:2005.