

## **Characterization of waste - Calculation of dry matter by determination of dry residue or water content**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14346:2007 sisaldab Euroopa standardi EN 14346:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 29.01.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14346:2007 consists of the English text of the European standard EN 14346:2006.</p> <p>This document is endorsed on 29.01.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> This European Standard specifies methods for the calculation of the dry matter of samples for which the results of performed analysis are to be calculated to the dry matter basis. Depending on the nature of the sample, the calculation is based on a determination of the dry residue (Method A) or a determination of the water content (Method B). It applies to samples containing more than 1 % (m/m) of dry residue or more than 1 % (m/m) of water.</p>	<p><b>Scope:</b> This European Standard specifies methods for the calculation of the dry matter of samples for which the results of performed analysis are to be calculated to the dry matter basis. Depending on the nature of the sample, the calculation is based on a determination of the dry residue (Method A) or a determination of the water content (Method B). It applies to samples containing more than 1 % (m/m) of dry residue or more than 1 % (m/m) of water.</p>
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ICS 13.030.01

**Võtmesõnad:** azeotropic, chemical analysis and testin, elements, mathematical calculations, methods, procedures, properties, quality control, reagents, solid matter, test equipment, testing, tipping (waste), waste dumps, waste treatment, wastes, water content, water practice

ICS 13.030.01

English Version

## Characterization of waste - Calculation of dry matter by determination of dry residue or water content

Caractérisation des déchets - Calcul de la teneur en  
matière sèche par détermination du résidu sec ou de la  
teneur en eau

Charakterisierung von Abfällen - Berechnung der  
Trockenmasse durch Bestimmung des Trockenrückstandes  
oder des Wassergehaltes

This European Standard was approved by CEN on 25 November 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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.



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## Foreword

This document (EN 14346:2006) has been prepared by Technical Committee CEN/TC 292 "Characterization of waste", the secretariat of which is held by NEN.

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 June 2007, and conflicting national standards shall be withdrawn at the latest by June 2007.

Anyone dealing with waste and sludge analysis should be aware of the typical risks of that kind of material irrespective of the parameter to be determined. Waste and sludge samples may contain hazardous (e.g. toxic, reactive, flammable, infectious) substances, which can be liable to biological and/or chemical reaction. Consequently these samples should be handled with special care. Gases which may be produced by microbiological or chemical activity are potentially flammable and will pressurise sealed bottles. Bursting bottles are likely to result in hazardous shrapnel, dust and/or aerosol. National regulations should be followed with respect to all hazards associated with this method.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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

In case of waste analysis water is usually not considered as part of the sample and results are generally related to dry matter, which can be calculated from the water content or the dry residue. For this purpose two methods are described in this European Standard. The choice of the method depends on the type of sample and its content of volatile substances excluding water.

As a result of the validation study the determination of water content by azeotropic distillation has been replaced by Karl-Fischer-titration. Nevertheless the distillation may be useful in certain cases. This method is described in Annex B (informative).

## 1 Scope

This European Standard specifies methods for the calculation of the dry matter of samples for which the results of performed analysis are to be calculated to the dry matter basis. Depending on the nature of the sample, the calculation is based on a determination of the dry residue (Method A) or a determination of the water content (Method B). It applies to samples containing more than 1 % (*m/m*) of dry residue or more than 1 % (*m/m*) of water.

## 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.

EN 15002, *Characterization of waste — Preparation of test portions from the laboratory sample*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE These definitions only apply to waste. In standards dealing with other matrices other terms and definitions exist for technical reasons.

### 3.1 dry residue

$w_{dr}$

remaining mass fraction of a sample after a drying process at 105 °C as specified in this European Standard

### 3.2 water content

$w_w$

mass fraction of water in a sample determined by Karl-Fischer-titration as specified in this European Standard

### 3.3 dry matter

$w_{dm}$

mass fraction of a sample excluding water expressed as a percentage by mass calculated by determination of dry residue or water content according to this European Standard

## 4 Principle

### 4.1 General

Depending on the nature of the sample (liquid, solid or multiphase) either the water content or the dry residue is to be determined. The results from the determination of water content or dry residue are used to calculate the dry matter. In case of multiphase samples these samples shall be homogenized. If homogenization is not possible, a phase separation according to EN 15002 shall be applicable and the phases are analysed separately.