

**Sludge, treated biowaste, soil and waste - Determination
of loss on ignition**

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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ICS 13.030.01

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ICS 13.030.01

English Version

Sludge, treated biowaste, soil and waste - Determination of loss on ignition

Boues, bio-déchets traités, sols et déchets - Détermination de la perte au feu

Schlamm, behandelter Bioabfall, Boden und Abfall - Bestimmung des Glühverlusts

This European Standard was approved by CEN on 24 May 2012.

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Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Principle.....	5
5 Interferences and sources of errors	5
6 Apparatus	6
7 Procedure	6
7.1 Samples with low content of volatiles	6
7.2 Samples containing volatile substances	7
8 Calculation and expression of results.....	7
9 Precision	8
10 Test report	8
Annex A (informative) Repeatability and reproducibility data.....	9
A.1 Materials used in the interlaboratory comparison study	9
A.2 Interlaboratory comparison results	10
Bibliography.....	11

Foreword

This document (EN 15935:2012) has been prepared by Technical Committee CEN/TC 400 "Project Committee - Horizontal standards in the fields of sludge, biowaste and soil", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

The preparation of this document by CEN is based on a mandate by the European Commission (Mandate M/330), which assigned the development of standards on sampling and analytical methods for hygienic and biological parameters as well as inorganic and organic determinants, aiming to make these standards applicable to sludge, treated biowaste and soil as far as this is technically feasible.

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

Introduction

This European Standard is applicable and validated for several types of matrices as indicated in Table 1 (see also Annex A for the results of the validation).

Table 1 — Matrices for which this European Standard is applicable and validated

Matrix	Materials used for validation
Sludge	Municipal sludge
Biowaste	Compost, Fresh Compost
Soil	Sludge amended soil, Agricultural soil
Waste	Contaminated soil, Dredged sludge, Nickel sludge

WARNING — Persons using this European Standard should be familiar with usual laboratory practice. This European Standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

IMPORTANT — It is absolutely essential that tests conducted according to this European Standard be carried out by suitably trained staff. Special measures shall be taken during the ignition process to prevent contamination of the laboratory atmosphere by flammable, explosive or toxic gases.

1 Scope

This European Standard specifies a method for the determination of the loss on ignition (LOI) of dry matter at 550 °C. The dry matter is determined according to EN 15934.

This method applies to the determination of loss on ignition of sludge, treated biowaste, soil and waste. The LOI of sediments can also be determined with this method.

NOTE The loss on ignition is often used as an estimate for the content of organic matter in the sample. Inorganic substances or decomposition products (e.g. H₂O, CO₂, SO₂, O₂) are released or absorbed and some inorganic substances are volatile under the reaction conditions.

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.

EN 15934, *Sludge, treated biowaste, soil and waste — Calculation of dry matter fraction after determination of dry residue or water content*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15934 and the following apply.

3.1

loss on ignition

LOI

mass fraction lost by burning up a dried sample to constant mass at a specified temperature

3.2

residue on ignition

mass fraction remaining after burning up a dried sample to constant mass at a specified temperature

4 Principle

A weighed test portion is burned up in a furnace to constant mass at (550 ± 25) °C. The difference in mass before and after the ignition process is used to calculate the loss on ignition.

The determination is performed on a dried sample or directly on the undried sample including a drying step or by referring to the dry matter.

5 Interferences and sources of errors

LOI is an empirical parameter, thus in principle there is no interference connected to the determination. However, for some purposes the determination of LOI is used for the assessment of the content of organic matter in the sample. It should be noted that elementary carbon in the sample will be included in the loss on ignition value. Furthermore, any volatilisation or chemical reactions of inorganic compounds will also be included in the loss on ignition value.

Chemically bound water could be released during heating, thereby contributing to the loss on ignition.