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IRISH STANDARD

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ICS 13.030.10
13.080.10

**CHARACTERIZATION OF WASTE AND SOIL -
DETERMINATION OF ELEMENTAL
COMPOSITION BY X-RAY FLUORESCENCE**

National Standards
Authority of Ireland
Glasnevin, Dublin 9
Ireland

Tel: +353 1 807 3800
Fax: +353 1 807 3838
<http://www.nsai.ie>

Sales
<http://www.standards.ie>

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English Version

Characterization of waste and soil - Determination of elemental composition by X-ray fluorescence

Caractérisation des déchets et du sol - Détermination de la composition élémentaire par fluorescence X

Charakterisierung von Abfällen und Böden - Bestimmung der elementaren Zusammensetzung durch Röntgenfluoreszenz-Analyse

This European Standard was approved by CEN on 22 March 2007.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 15309:2007) has been prepared by Technical Committee CEN/TC 292 “Characterization of waste”, the secretariat of which is held by NEN.

This document has been prepared in coordination with ISO/TC 190 “Soil quality”.

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of an identical text or by endorsement, at the latest by November 2007, and conflicting national standards shall be withdrawn at the latest by November 2007.

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, 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

X-ray fluorescence spectrometry is a fast and reliable method for the quantitative analysis of the total content of certain elements within different matrices.

The quality of the results obtained depends very closely on the type of instrument used, e.g. bench top or high performance, energy dispersive or wavelength dispersive instruments. When selecting a specific instrument several factors have to be considered, such as the matrices to be analyzed, elements to be determined, detection limits required and the measuring time. The quality of the results depends on the element to be determined and on the surrounding matrix.

Due to the wide range of matrix compositions and the lack of suitable reference materials in the case of inhomogeneous matrices like waste, it is generally difficult to set up a calibration with matrix-matched reference materials.

Therefore this standard describes two different procedures:

- a quantitative analytical procedure for homogeneous solid waste, soil and soil-like material in the normative part. The calibration is based on matrix-matched standards;
- an XRF screening method for solid and liquid material as waste, sludge and soil in the informative Annex A which provides a total element characterisation at a semi-quantitative level. The calibration is based on matrix-independent calibration curves, previously set up by the manufacturer.

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