

SVENSK STANDARD

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Slam, behandlat bioavfall och mark – Uppslutning av salpetersyralösliga fraktioner av grundämnen

Sludge, treated biowaste and soil – Digestion of nitric acid soluble fractions of elements

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Denna standard är framtagen av kommittén för Karaktärisering av avfall, mark och slam, SIS/TK 535.

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EUROPEAN STANDARD

EN 16173

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2012

ICS 13.080.10; 13.030.01

English Version

Sludge, treated biowaste and soil - Digestion of nitric acid soluble fractions of elements

Boues, biodéchets traités et sols - Digestion des éléments
solubles dans l'acide nitrique

Schlamm, behandelter Bioabfall und Boden - Aufschluss
von mit Salpetersäure löslichen Anteilen von Elementen

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

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-CENELEC Management Centre or to any CEN member.

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Foreword

This document (EN 16173:2012) 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of an identical text or by endorsement, at the latest by February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.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.

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Introduction

This method is intended to provide a multi-element digestion of sludge, treated biowaste and soil prior to analysis. It is known that the digestion of environmental samples with nitric acid does not necessarily lead to a complete element breakdown, and the extract from a test sample may not reflect the total concentrations of the target analytes. However, for most environmental applications the result is fit for the purpose.

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
Soil	Sludge amended soils

WARNING — Persons using this European Standard should be familiar with usual laboratory practice. The reagents used in this European Standard are strongly corrosive and partly very toxic. Safety precautions are absolutely necessary, not only due to the strong corrosive reagents, but also to high temperature and high pressure.

The use of laboratory-grade microwave equipment with isolated and corrosion resistant safety devices is required. Domestic (kitchen) type microwave ovens shall not be used, as corrosion by acid vapours may compromise the function of the safety devices and prevent the microwave magnetron from shutting off when the door is open, which could result in operator exposure to microwave energy.

All procedures shall be performed in a fume hood or in closed force-ventilated equipment. By the use of strong oxidising reagents, the formation of explosive organic intermediates is possible, especially when dealing with samples with a high organic content. Do not open pressurized vessels before they have cooled down. Avoid contact with the chemicals and the gaseous reaction products.

IMPORTANT — It is absolutely essential that tests conducted according to this European Standard be carried out by suitably trained staff.