

**Soil improvers and growing media -
Extraction of calcium chloride/DTPA
(CAT) soluble nutrients**

Soil improvers and growing media - Extraction of
calcium chloride/DTPA (CAT) soluble nutrients

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13651:2002 sisaldab Euroopa standardi EN 13651:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 16.01.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13651:2002 consists of the English text of the European standard EN 13651:2001.</p> <p>This document is endorsed on 16.01.2002 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>
--	---

<p>Käsitlusala: This European Standard Specifies an extraction method for the routine determination of calcium chloride/DTPA (CAT-method) extraction nutrients and elements (as listed in annex B) in soil improvers or growing media. The method is not applicable to liming materials and performed materials such as mineral wool slabs and foam slabs.</p>	<p>Scope: This European Standard Specifies an extraction method for the routine determination of calcium chloride/DTPA (CAT-method) extraction nutrients and elements (as listed in annex B) in soil improvers or growing media. The method is not applicable to liming materials and performed materials such as mineral wool slabs and foam slabs.</p>
---	---

ICS 65.080

Võtmesõnad: agricu, aqua regia, definitions, elements, extraction, extraction agents, extraction methods of an, extraction methods of analysis, growing media, methods of analysis, soil improvement, soil improving materials, soils, soluble, solvents, substrates (insulating)

ICS 65.080

English version

Soil improvers and growing media - Extraction of calcium chloride/DTPA (CAT) soluble nutrients

Amendements du sol et supports de culture - Extraction des éléments nutritifs solubles dans le chlorure de calcium/DTPA (CAT)

Bodenverbesserungsmittel und Kultursubstrate - Extraktion von in Calciumchlorid/DTPA (CAT) löslichen Nährstoffen

This European Standard was approved by CEN on 11 August 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Principle	4
5 Reagents	4
6 Apparatus	5
7 Test sample	5
8 Procedure	6
9 Determination of the extracted nutrients and elements	6
10 Expression of results	6
11 Precision	6
12 Test report	7
Annex A (informative) Results of an interlaboratory trial to determine calcium chloride/DTPA (CAT) soluble nutrients and elements.....	8
Annex B (informative) Methods of analysis used in the interlaboratory trial	15
Bibliography.....	16

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 223 "Soil improvers and growing media", the secretariat of which is held by BSI.

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 March 2002, and conflicting national standards shall be withdrawn at the latest by March 2002.

The annexes A and B are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

SAFETY PRECAUTIONS — Care should be taken when handling samples that may contain sharps or is of a dusty nature.

1 Scope

This European Standard specifies an extraction method for the routine determination of calcium chloride/DTPA (CAT-method) extractable nutrients and elements (as listed in annex B) in soil improvers or growing media.

The method is not applicable to liming materials and preformed materials such as mineral wool slabs and foam slabs.

NOTE The requirements of the standard may differ from the national legal requirements for the declaration of the products concerned.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)*.

EN 13040:1999, *Soil improvers and growing media - Sample preparation for chemical and physical tests, determination of dry matter content, moisture content and laboratory compacted bulk density*.

3 Terms and definitions

For the purposes of this standard the terms and definitions given in EN 13040 apply.

4 Principle

A sample is extracted with calcium chloride/DTPA at $22\text{ °C} \pm 3\text{ °C}$ in an extraction volume ratio of 1+5. The extracted nutrients are determined by various methods as appropriate (see annex B).

5 Reagents

5.1 General

All reagents used shall be of recognised analytical quality and water of grade 2 according to EN ISO 3696.

5.2 Dihydrated calcium chloride, $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$.

5.3 Diethylenetriaminepentaacetic acid (DTPA), $\text{C}_{14}\text{H}_{23}\text{N}_3\text{O}_{10}$.

5.4 Concentrated extracting solution $\text{CaCl}_2/\text{DTPA}$, (CAT), dissolve 14,7 g $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$ (5.2) and 7,88 g DTPA (5.3) in 800 ml hot water (temperature approximately 80 °C) with stirring on a magnetic stirrer in a 1000 ml beaker. At $75\text{ °C} \pm 10\text{ °C}$ the reagents will dissolve within 2 h. Allow to cool to ambient temperature. Transfer the solution to a 1000 ml flask and dilute to the mark with water. The