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**Kakovost tal - Določevanje ogljikovodikov v območju C10 do C40 s plinsko kromatografijo (ISO 16703:2004)**

Soil quality - Determination of content of hydrocarbon in the range C10 to C40 by gas chromatography (ISO 16703:2004)

Bodenbeschaffenheit - Gaschromatographische Bestimmung des Gehalts an Kohlenwasserstoffen von C10 bis C40 (ISO 16703:2004)

Qualité du sol - Dosage des hydrocarbures de C10 à C40 par chromatographie en phase gazeuse (ISO 16703:2004)

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|           |                          |                                   |
|-----------|--------------------------|-----------------------------------|
| 13.080.10 | Kemijske značilnosti tal | Chemical characteristics of soils |
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 16703**

June 2011

ICS 13.080.10

English Version

**Soil quality - Determination of content of hydrocarbon in the  
range C<sub>10</sub> to C<sub>40</sub> by gas chromatography (ISO 16703:2004)**

Qualité du sol - Dosage des hydrocarbures de C<sub>10</sub> à C<sub>40</sub>  
par chromatographie en phase gazeuse (ISO 16703:2004)

Bodenbeschaffenheit - Gaschromatographische  
Bestimmung des Gehalts an Kohlenwasserstoffen von C<sub>10</sub>  
bis C<sub>40</sub> (ISO 16703:2004)

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## Foreword

The text of ISO 16703:2004 has been prepared by Technical Committee ISO/TC 190 "Soil quality" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 16703:2011 by Technical Committee CEN/TC 345 "Characterization of soils" 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of an identical text or by endorsement, at the latest by December 2011, and conflicting national standards shall be withdrawn at the latest by December 2011.

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.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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# INTERNATIONAL STANDARD

**ISO  
16703**

First edition  
2004-11-01

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## Soil quality — Determination of content of hydrocarbon in the range C<sub>10</sub> to C<sub>40</sub> by gas chromatography

*Qualité du sol — Dosage des hydrocarbures de C<sub>10</sub> à C<sub>40</sub> par  
chromatographie en phase gazeuse*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 16703 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical methods and soil characteristics*.

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# Soil quality — Determination of content of hydrocarbon in the range C<sub>10</sub> to C<sub>40</sub> by gas chromatography

## 1 Scope

This International Standard specifies a method for the quantitative determination of the mineral oil (hydrocarbon) content in field-moist soil samples by gas chromatography.

The method is applicable to mineral oil contents (mass fraction) between 100 mg/kg and 10 000 mg/kg soil, expressed as dry matter, and can be adapted to lower limits of detection.

This International Standard is applicable to the determination of all hydrocarbons with a boiling range of 175 °C to 525 °C, of *n*-alkanes from C<sub>10</sub>H<sub>22</sub> to C<sub>40</sub>H<sub>82</sub>, of isoalkanes, cycloalkanes, alkylbenzenes, alkylnaphthalenes and polycyclic aromatic compounds, provided that they are not absorbed on the specified column during the clean-up procedure.

This International Standard is not applicable to the quantitative determination of hydrocarbons < C<sub>10</sub> originating from gasolines.

On the basis of the peak pattern of the gas chromatogram obtained, and of the boiling points of the individual *n*-alkanes listed in Annex B, the approximate boiling range of the mineral oil and some qualitative information on the composition of the contamination can be obtained.

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## 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.

ISO 8466-1:1990, *Water quality — Calibration and evaluation of analytical methods and estimation of performance characteristics — Part 1: Statistical evaluation of the linear calibration function*

ISO 10381-1, *Soil quality — Sampling — Part 1: Guidance on the design of sampling programmes*

ISO 11465:1993, *Soil quality — Determination of dry matter and water content on a mass basis — Gravimetric method*

ISO 14507, *Soil quality — Pretreatment of samples for determination of organic contaminants*