INTERNATIONAL STANDARD

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Soil quality — Determination of selected coal-tar-derived phenolic compounds using high performance liquid chromatography (HPLC)

Qualité du sol — Dosage d'une sélection de composés phénoliques dérivés du goudron de houille en utilisant la chromatographie liquide à haute performance (CLHP)

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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 11709 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical methods and soil characteristics*.

Soil quality — Determination of selected coal-tar-derived phenolic compounds using high performance liquid chromatography (HPLC)

1 Scope

This International Standard specifies a method for the quantitative determination of selected coal-tar-derived phenols, namely phenol, methylphenols such as (*ortho*-, *meta*-, *para*-)cresols, and dihydroxybenzenes such as catechol, resorcinol and hydroquinone (see Table 1) in soil by using high performance liquid chromatography with ultraviolet/diode array (HPLC/UV/DAD) or fluorescence (HPLC/FLD) or electrochemical detection (HPLC/ELCD). It is applicable to all types of soil with contamination levels of individual phenols in the range of approximately 0,08 mg/kg to 10 mg/kg of soil.

NOTE Also with this method, other higher methylated phenols, for example, dimethylphenols such as (2,3-, 2,4-, 2,5-, 2,6-, 3,4- and 3,5-)xylenoles, 2-isopropylphenol, 2,3,5-trimethylphenol and 1-naphthol can be analysed, provided the suitability and the validity of the method are proven.

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

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

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