

Soil quality — Determination of some selected chlorophenols — Gas-chromatographic method with electron-capture detection

ICS 13.080.10

National foreword

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Summary of pages

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**Soil quality — Determination of some
selected chlorophenols —
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electron-capture detection**

*Qualité du sol — Dosage de certains chlorophénols — Méthode de
chromatographie en phase gazeuse avec détection par capture
d'électrons*



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Foreword

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ISO 14154 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical methods and soil characteristics*.

Soil quality — Determination of some selected chlorophenols — Gas-chromatographic method with electron-capture detection

WARNING — Chlorophenols are toxic and some are even carcinogenic. When handling samples containing chlorophenols, avoid skin contact. Use gloves and protective clothing. If large amounts of aerosols and dust particles are produced during the sampling, breathing protection may be necessary.

1 Scope

This International Standard describes the gas chromatographic determination of 15 chlorophenols (2,3-, 2,4-, 2,5-, 2,6-, 3,4- and 3,5-dichlorophenol; 2,3,4-, 2,3,5-, 2,3,6-, 2,4,5-, 2,4,6- and 3,4,5-trichlorophenol, 2,3,4,5- and 2,3,4,6-tetrachlorophenol and pentachlorophenol) in soil samples. This method can also be applied to other solid samples such as sediments and solid wastes.

This International Standard describes an acid-base liquid extraction, followed by acetylation and then liquid/liquid extraction. Determination of mass concentration is then carried out by gas chromatography and electron-capture detection.

This method is applicable to chlorophenols at the lowest mass concentrations ranging from approximately 0,01 mg/kg to 0,05 mg/kg depending on the component sensitivity and the quantity of sample used. In some cases complete separation of isomers cannot be achieved, in which case the sum is reported (for instance 2,4- and 2,5-dichlorophenols).

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 3696:1987, *Water for analytical laboratory use — Specification and test methods*

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*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

chlorophenol

aromatic hydroxy compound (phenol) carrying one to five chlorine atoms