
**Soil quality — Determination of
organochlorine pesticides and
polychlorinated biphenyls — Gas-
chromatographic method with electron
capture detection**

*Qualité du sol — Dosage des pesticides organochlorés et des biphényles
polychlorés — Méthode par chromatographie en phase gazeuse avec
détection par capture d'électrons*



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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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10382 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical methods and soil characteristics*.

Annexes A, B, C and D of this International Standard are for information only.

Soil quality — Determination of organochlorine pesticides and polychlorinated biphenyls — Gas-chromatographic method with electron capture detection

1 Scope

This International Standard specifies a method for quantitative determination of seven polychlorinated biphenyls and seventeen organochlorine pesticides in soil.

This International Standard is applicable to all types of soil.

Under the conditions specified in this International Standard, limits of detection of 0,1 µg/kg to 4 µg/kg (expressed as dry matter) can be achieved.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

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

ISO 10381-2, *Soil quality — Sampling — Part 2: Guidance on sampling techniques*

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 the determination of organic contaminants*

3 Principle

After pretreatment, the soil test sample is extracted with a hydrocarbon solvent.

The extract is concentrated; polar compounds are removed by passing the concentrated extract through a column filled with aluminium oxide. The eluate is concentrated.

Elemental sulfur is removed from the concentrated extract, if necessary, by treatment with tetrabutylammonium sulfite reagent.

The extract is analysed by gas chromatography. The various compounds are separated using a capillary column with an immobile phase of low polarity. Detection occurs with an electron-capture detector (ECD).

Polychlorinated biphenyls (PCBs) and organochlorine pesticides (OCPs) are assigned and quantified by comparison of relative retention times and relative peak heights (or peak areas) with respect to injection standards