INTERNATIONAL STANDARD

ISO 11264

First edition
2005-05-01

Soil quality — Determination of herbicides — Method using HPLC with UV-detection

Qualité du sol — Dosage des herbicides — Méthode par CLHP avec détection par UV

Reference number
ISO 11264:2005(E)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS

© ISO 2005

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

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 11264 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical methods and soil characteristics*.

Soil quality — Determination of herbicides — Method using HPLC with UV-detection

1 Scope

This International Standard specifies a high-performance liquid chromatography (HPLC) method for qualitative and quantitative determination of herbicides of various substance classes in soils. This method covers triazines including their related metabolites, phenyl urea compounds and other herbicides. Compounds are identified and quantified with UV-detection.

The limit of detection for triazines and phenyl urea compounds is ~ 0,01 mg/kg dry matter. It is dependent upon both the compound and the soil matrix.

2 Normative reference

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

ISO 11465, *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 Principle

The field-moist soil sample is extracted with a mixture of acetone and water (2:1). After addition of NaCl and dichloromethane or petroleum, the isolated organic phase is concentrated and transferred to a acetonitrile/water mixture and without further clean-up is analysed using RP-HPLC, gradient of acetonitrile and water, with UV-detection. Results can be confirmed using diode array UV spectra, GC-MS, GC-NPD or GC-AED (some may need derivatisation).

4 Reagents

All reagents shall be of known analytical grade. The purity of the reagents used shall be checked by running a blank determination as described in 6.5. If the blank value is unreasonably high, i.e. more than 10 % of the lowest value of interest, find the cause through a step-by-step examination of the whole procedure. For measurements at the limit of determination, even reagents suitable for residue analyses may not fulfil this criterion. In this case, sufficient blank determinations shall be incorporated in each series of samples.

4.1 **Water**, for residue analysis, normally tap water (drinking water) is suitable.

4.2 **Acetone**, for residue analysis.