# INTERNATIONAL STANDARD

# ISO 10390

Second edition
2005-02-15

# Soil quality — Determination of pH

*Qualité du sol — Détermination du pH*

Reference number
ISO 10390:2005(E)

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Published in Switzerland

## Foreword

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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 10390 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical methods and soil characteristics*.

This second edition cancels and replaces the first edition (ISO 10390:1994), which has been technically revised.

# Soil quality — Determination of pH

## 1 Scope

This International Standard specifies an instrumental method for the routine determination of pH using a glass electrode in a 1:5 (volume fraction) suspension of soil in water (pH in $H_2O$), in 1 mol/l potassium chloride solution (pH in KCl) or in 0,01 mol/l calcium chloride solution (pH in $CaCl_2$).

This International Standard is applicable to all types of air-dried soil samples, for example pretreated in accordance with ISO 11464.

## 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 1770:1981, *Solid-stem general purpose thermometers*

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

## 3 Principle

A suspension of soil is made up in five times its volume of one of the following:

- water;
- a solution of potassium chloride (KCl) in water, $c = 1$ mol/l;
- a solution of calcium chloride ($CaCl_2$) in water, $c = 0{,}01$ mol/l.

The pH of the suspension is measured using a pH-meter.

NOTE To make the procedure generally applicable to all types of soil samples, a volume-to-volume shaking ratio is chosen because then all soils can be treated in the same way. If a mass-to-volume ratio were chosen, the weighed amount of test sample would have to be adapted for soils with a low density, to enable the preparation of the suspension. For the purpose of this International Standard, taking the required volume of test portion with a measuring spoon is sufficiently accurate.

## 4 Reagents

Use only reagents of recognized analytical grade.

**4.1 Water**, with a specific conductivity not higher than 0,2 mS/m at 25 °C and a pH greater than 5,6 (grade 2 water in accordance with ISO 3696:1987).