INTERNATIONAL STANDARD

ISO 11265

First edition
1994-10-01

Soil quality — Determination of the specific electrical conductivity

Qualité du sol — Détermination de la conductivité électrique spécifique

Reference number
ISO 11265:1994(E)

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.

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.

International Standard ISO 11265 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical methods and soil characteristics*.

Annex A of this International Standard is for information only.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Soil quality — Determination of the specific electrical conductivity

1 Scope

This International Standard specifies an instrumental method for the routine determination of the specific electrical conductivity in an aqueous extract of soil. The determination is carried out to obtain an indication of the content of water-soluble electrolytes in a soil.

This International Standard is applicable to all types of air-dried soil samples.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

ISO 7888:1985, *Water quality — Determination of electrical conductivity.*

ISO 11464:1994, *Soil quality — Pretreatment of samples for physico-chemical analyses.*

3 Principle

Air-dried soil is extracted with water at 20 °C ± 1 °C at an extraction ratio of 1:5 (m/V), to dissolve the electrolytes. The specific electrical conductivity of the filtered extract is measured and the result is corrected to a temperature of 25 °C.

NOTE 1 For definitions of the concepts used, see ISO 7888.

4 Reagents

Use only reagents of recognized analytical grade.

4.1 Water, with a specific electrical conductivity not higher than 0,2 mS/m at 25 °C (grade 2 water according to ISO 3696).

4.2 Potassium chloride solution, c(KCl) = 0,1 mol/l.

Dissolve 7,456 g of potassium chloride, previously dried for 24 h at 220 °C ± 10 °C in water (4.1), and dilute to 1 000 ml at 20 °C. The specific electrical conductivity of this solution is 1 290 mS/m at 25 °C.

4.3 Potassium chloride solution, c(KCl) = 0,020 0 mol/l.

Pour 200,0 ml of the potassium chloride solution (4.2) into a 1 000 ml volumetric flask and dilute to volume with water at 20 °C. The specific electrical conductivity of this solution is 277 mS/m at 25 °C.

4.4 Potassium chloride solution, c(KCl) = 0,010 0 mol/l.

Pour 100,0 ml of the potassium chloride solution (4.2) into a 1 000 ml volumetric flask and dilute to volume with water at 20 °C. The specific electrical conductivity of this solution is 141 mS/m at 25 °C.

All the potassium chloride solutions (4.2, 4.3 and above) used for calibration shall be stored in tightly sealed bottles which do not release sufficient alkali or alkali-earth cations to affect the electrical conductivity of the solutions.