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STANDARD

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**Soil quality — Pretreatment of samples for  
physico-chemical analyses**

*Qualité du sol — Prétraitement des échantillons pour analyses  
physico-chimiques*



Reference number  
ISO 11464:1994(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 11464 was prepared by Technical Committee ISO/TC 190, *Soil quality*, Subcommittee SC 3, *Chemical methods and soil characteristics*.

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

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International Organization for Standardization

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# Soil quality — Pretreatment of samples for physico-chemical analyses

## 1 Scope

This International Standard specifies the pretreatments required for soil samples that are to be subjected to physico-chemical analyses and describes the following five types of pretreatment of samples: drying, crushing, sieving, dividing and milling.

The pretreatment procedures described in this International Standard are not applicable if they affect the results of the determinations to be made. In general, International Standards for analytical methods will state when it is necessary to adopt other procedures.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 565:1990, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*.

## 3 Principle

Soil samples are dried in the air, or in an oven at a

temperature not exceeding 40 °C, or freeze-dried (see 5.2 ). If necessary, the soil sample is crushed while still damp and friable and again after drying (see 5.3). The soil is sieved (see 5.4) and the fraction smaller than 2 mm is divided into portions mechanically or by hand, to enable representative subsampling for analysis (see 5.5). If small subsamples (< 2 g) are required for analysis, the size of the particles of the fraction smaller than 2 mm is further decreased (see 5.6 ). The necessary procedures are given in the flow diagram in figure 1.

### NOTES

1 A drying temperature of 40 °C in an oven is preferable to air drying at room temperature because the increased speed of the drying limits changes due to microbial activity.

2 It should be noted that every type of pretreatment will have an influence on several soil properties.

3 Storing soil samples, including samples that are as received, air dried, refrigerated or stored in the absence of light, for a long time may have an influence on a number of soil parameters, especially solubilities of both inorganic and organic fractions. See [1].

4 Special measures should usually be taken for samples from contaminated soils. It is important to avoid contact with the skin and special measures should be taken when drying such samples (ventilation, air removal, etc.). Samples may be hazardous because of the presence of chemical contaminants etc., fungal spores, or pathogens such as leptospirosis, and appropriate safety precautions should be taken.

5 In this International Standard, it is generally assumed that at least 500 g of fresh soil is available.