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STANDARD

**11817**

First edition  
1994-10-01

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**Roasted ground coffee — Determination  
of moisture content — Karl Fischer method  
(Reference method)**

*Café torréfié moulu — Détermination de la teneur en eau — Méthode de  
Karl Fischer (Méthode de référence)*



Reference number  
ISO 11817:1994(E)

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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.

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 11817 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Subcommittee SC 15, *Coffee*.

Annex A of this International Standard is for information only.

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

Printed in Switzerland

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# Roasted ground coffee — Determination of moisture content — Karl Fischer method (Reference method)

## 1 Scope

This International Standard specifies a method for the determination of moisture content of roasted ground coffee by the Karl Fischer titration method. Since it is precise, it is suitable as a reference method.

## 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 760:1978, *Determination of water — Karl Fischer method (General method)*.

## 3 Definition

For the purposes of this International Standard, the following definition applies.

**3.1 moisture content:** Content of water, extracted with dried methanol in accordance with the procedure specified in this International Standard.

Moisture content is expressed as a percentage by mass.

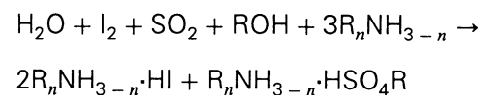
## 4 Principle

Extraction of the test portion with dried methanol at

65 °C (boiling temperature) under reflux with the exclusion of moisture. After cooling, titration of an aliquot part of the retained extract in a Karl Fischer apparatus until the end-point of the titration is reached according to the biamperometric method.

## 5 Reaction

During the determination of moisture content according to the Karl Fischer method, the water present in the sample reacts in the presence of an amine and an alcohol with iodine and sulfur dioxide:



where R is an alkyl or alkoxy group.

The end-point of the reaction is obtained electrometrically by a surplus of iodine.

## 6 Reagents and materials

Use only reagents of recognized analytical quality and distilled or demineralized water or water of equivalent purity.

**6.1 Pyridine-free Karl Fischer reagent<sup>1)</sup>**, one- or two-component system.

**6.2 Methanol**, containing not more than 0,01 % (*m/m*) of water.

**6.3 Molecular sieve**, 0,3 nm, pearl shaped; diameter approx. 2 mm; bulk density (loose) approx. 75 g per 100 ml.

1) Suitable products are commercially available.