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Plastics — Film and sheeting — Determination of water vapour transmission rate —

Part 7: Calcium corrosion method

Plastiques — Film et feuille — Détermination du coefficient de transmission de vapeur d'eau —

Partie 7: Méthode de la corrosion du calcium

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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

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 11, *Products*.

ISO 15106 consists of the following parts, under the general title *Plastics — Film and sheeting — Determination of water vapour transmission rate*:

— *Part 1: Humidity detection sensor method*

— *Part 2: Infrared detection sensor method*

— *Part 3: Electrolytic detection sensor method*

— *Part 4: Gas-chromatographic detection sensor method*

— *Part 5: Pressure sensor method*

— *Part 6: Atmospheric pressure ionization mass spectrometer method*

— *Part 7: Calcium corrosion method*

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Plastics — Film and sheeting — Determination of water vapour transmission rate —

Part 7: Calcium corrosion method

1 Scope

This part of ISO 15106 specifies a method for determining the water vapour transmission rate of plastic film, plastic sheeting, and multi-layer structures including plastics based on measurements of calcium degradation due to the reaction with water.

NOTE The method provides rapid measurement over a wide range of water vapour transmission rates.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
water vapour transmission rate
amount of water vapour transmitted through unit area of test specimen per unit time under specified conditions

Note 1 to entry: Water vapour transmission rate is expressed in grams per square metre per 24 h [g/(m^2·24 h)].

2.2
seal material
adhesive materials between test specimen and glass slide for protecting the calcium film from the corrosive gas

2.3
encapsulant
encapsulation material for protecting the calcium film from the corrosive gas

3 Principle

The calcium test method is based on measuring the rate of reaction between calcium metal and water. A calcium film is deposited on a test specimen or a glass slide and sealed or encapsulated according to one of the three procedures described in Annex A, Annex B, and Annex C. The water vapour transmission rate is determined from the change of calcium film properties after exposure in an environmental chamber as described in Annex A, Annex B, and Annex C.

4 Test specimens

4.1 The test specimens shall be representative of the material, free from wrinkles, creases and pinholes, and have uniform thickness. Each test specimen shall have a larger area than the transmission area of the cell.

4.2 Three test specimens shall be tested unless otherwise specified or agreed between the interested parties.

NOTE For some products, testing more than three test specimens gives a more representative result.

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