

ICS 55.020
CCS A 80



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 21529-2008

**Determination of water vapour transmission rate for plastic film
and sheeting -- Electrolytic detection sensor method**

塑料薄膜和薄片水蒸气透过率的测定 电解传感器法

(English Translation)

Issued on: April 1, 2008

Implemented on: October 1, 2008

Issued by: Standardization Administration of China

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Foreword

This revised standard adopts ISO 15106-3:2003 "Plastics film and sheet water vapor permeability test methods - Part 3. Electrolytic Sensor Detection "(in English).

This standard is based on ISO 15106-3:2003 redrafted. The list of standard and ISO 15106-reg number in Appendix D 3.2003 reg control list numbered.

Taking into account China's national conditions, in the use of ISO 15106-3:2003, the standard of this made some changes. About the technical differences have been incorporated into positive the paper identifies a single vertical line and it deals with the provisions margin. These technical differences are given in Appendix E and its prime Because the list for reference.

This standard and ISO 15106-3:2003 standard compared, the main differences are as follows.

- 7.2.4 ~ 7.2.7 adds provisions were porous plate, temperature control device, the electrolytic cell, valve components made several instructions;
- Increased 7.3 standard film to calibrate the device provides that in order to make the standard test data and other standard test methods Data comparable;
- In the test step 9.7, the provisions of the current reaches a constant value, that water vapor reaches a steady state determination condition;
- In Chapter 11, the test results, it is prescribed deviation value for each test sample and the arithmetic mean of the sample;
- Remove the ISO 15106-3:2003 Chapter 12;
- Added Appendix B. Appendix B using ASTM E104:2002 "to maintain a constant relative humidity using an aqueous solution of a standard method" and DIN 53122.2. test 1982 "Testing of plastic films, rubber, paper, cardboard and other sheet water vapor permeability Data relative humidity of saturated aqueous solution of different salts given electrolysis

method "provided that can be achieved;

--- Added Appendix C. Appendix C reference DIN 53122.2. 1982 the instrument constant (8.067) derivation process, the instrument often Number was derived.

This standard Annex A, Annex B is normative appendix, Appendix C, Appendix D, Appendix E is informative appendix.

This standard by the National Packaging Standardization Technical Committee and centralized.

This standard was drafted. China Packaging Research & Test Center, the National Packaging Products Quality Supervision and Inspection Center (Jinan), Labthink Technology Co., Ltd.

1 Scope

This standard specifies the test methods for electrolytic sensors measuring water vapor transmission rate.

This standard applies to rapid determination of plastic film, sheet and the multilayer structure containing water vapor transmission rate of plastic material.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 1037-1988 plastic film and sheet water vapor permeability test methods Cup method
GB/T 6672 plastic film and sheet thickness measurement of the mechanical measurements
(GB/T 6672-2001, idt ISO 4593:1993)

3 Terms and Definitions

The following terms and definitions apply to this standard.

Under certain conditions, the amount of water vapor per unit time through unit area of sample.

NOTE: The standard transmission rate of water vapor in the definition of GB/T 1037-1988 water vapor transmission rate of the definition of the meaning is the same, the water vapor transmission rate (amount) Units of grams per square meter per 24 hours [g/(m² · 24h)].

Principle 4

The sample was clamped to the permeate chamber, the sample chamber will penetrate into dry chamber and the wet chamber (humidity adjustable). With dry carrier gas flow in the dry chamber Through, from the wet steam chamber through the sample is carried by the carrier gas to the electrolytic cell. The cell structure is generally. There are two spiral metal electrodes within Electrode, the electrode is mounted on the inner wall of a glass capillary, the electrode surface is coated with a thin layer of phosphorus pentoxide. The carrier gas through a glass capillary, the carrier gas the vapor is carried pentoxide quantitatively absorbed. By applying to the electrodes a certain DC voltage electrolysis into hydrogen and water vapor oxygen. According to the electrolytic current value to calculate the amount of water vapor per unit time through unit area of \u200b\u200bspecimen.

5 Sample

5.1

sample should be representative, uniform thickness, no creases, folds, pinholes. Area of \u200b\u200bsample should be greater than the osmotic chamber through the area, the sample should be secret Package good clip.

5.2

water vapor transmission rate of at least three test specimens.

5.3

thickness shall be measured in accordance with the provisions of GB/T 6672, each sample measuring at least three equally spaced points.

6 for conditioning

At a temperature of $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, relative humidity of $50\% \pm 10\%$ of the sample under the conditions of state regulation, settling time at least 4h.