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

GB/T 43019.5-2023

**Determination of water vapour transmission rate for plastics
film and sheeting - Part 5: Pressure sensor method**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is Part 5 of "Determination of Water Vapor Transmission Rate of Plastic Films and Sheets". "Water vapor transmission rate of plastic films and sheets"

Determination has published the following sections.

---Determination of water vapor transmission rate of plastic films and sheets Humidity sensor method (GB/T 30412-2013);

---Determination of water vapor transmission rate of plastic films and sheets using infrared sensor method (GB/T 26253-2010);

---Determination of water vapor transmission rate of plastic films and sheets by electrolytic sensor method (GB/T 21529-2008);

---Part 7. Calcium corrosion method (GB/T 43019.7-2023).

This document is equivalent to ISO 15106-5:2015 "Determination of water vapor transmission rate of plastic films and sheets - Part 5. Pressure"

Sensor Act.

This document adds a chapter "Normative References".

This document has made the following minimal editorial changes.

---In order to coordinate with the existing standards, the name of the standard is changed to "Determination of water vapor transmission rate of plastic films and sheets - Part 5.Pressure"

Sensor Act.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

Introduction

"Determination of Water Vapor Transmission Rate of Plastic Films and Sheets" is a standard for measuring the water vapor transmission rate of plastic films and sheets.

Product standards for various types of plastic films and sheets provide support and are planned to be composed of 7 parts.

---"Humidity Sensor Method for Determination of Water Vapor Transmission Rate of Plastic Films and Sheets" (GB/T 30412-2013). The purpose is to collect

Determine the water vapor transmission rate of plastic films and sheets using the humidity sensor method.

---"Infrared sensor method for determination of water vapor transmission rate of plastic films and sheets" (GB/T 26253-2010). The purpose is to collect

Determination of water vapor transmittance of plastic films and sheets using infrared sensor method.

--- "Electrolytic sensor method for determination of water vapor transmission rate of plastic films and sheets" (GB/T 21529-2008). The purpose is to collect

Determination of water vapor transmission rate of plastic films and sheets using electrolytic sensor method.

The purpose is to determine the water vapor transmission rate of plastic films and sheets using the pressure sensor method.

---"Determination of water vapor transmission rate of plastic films and sheets - Part 7.Calcium corrosion method (GB/T 43019.7-2023). Purpose

The method is to determine the water vapor transmission rate of plastic films and sheets using the calcium corrosion method.

This section uses the pressure sensor method to determine the water vapor transmittance of plastic films and sheets, composite plastic films and sheets, so that plastic films

and thin-sheet water vapor transmission rate test methods are more systematic and standardized.

Determination of water vapor transmission rate of plastic films and sheets

Part 5. Pressure Sensor Method

1 Scope

This document describes the method for determining the water vapor transmission rate of plastic films and sheets, composite plastic films and sheets using the pressure sensor method.

method.

Note. This document provides a method for rapid determination of water vapor transmission rates over a wide range.

2 Normative reference documents

This document has no normative references.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Under the conditions of specified temperature and relative humidity and a certain water vapor pressure difference on both sides of the sample, the amount of water passing through the sample unit per unit time

The water vapor mass over the area.

Note. The unit is grams per square meter for 24 hours [g/(m²·24h)].

4 Principles

The sample clamped in the permeation chamber (see Figure 1) divides the permeation chamber into an upper chamber (high pressure chamber) and a lower chamber (low pressure chamber) that are independent and sealed.

cavity), and then evacuate the lower cavity and upper cavity in sequence after placing the sample. Fill the evacuated upper chamber with water vapor, and the water vapor passes through the sample from the upper chamber.

Penetrates into the inferior cavity. The amount of water vapor passing through the sample is obtained by monitoring the pressure increase in the lower chamber.

5 samples

5.1 The sample should be representative, uniform in thickness, and free of wrinkles, creases, pinholes and other defects. The area of each sample should be larger than the gas in the permeation chamber

through area.

Note. To avoid water vapor leakage, film products with uneven thickness are not suitable for testing as samples.

6 Sample status adjustment

Unless agreed upon by all parties involved, the specimen shall be conditioned under specified test conditions. Adjustment time is based on product standards

Regulation.