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

GB/T 43019.7-2023

**Determination of water vapour transmission rate for plastics
film and sheeting - Part 7: Calcium corrosion method**

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Table of Contents

Foreword

Introduction

1 Scope

2 Normative reference documents

3 Terms and definitions

4 Principles

5 samples

6 Sample status adjustment

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 5. Pressure sensor method (GB/T 43019.5-2023);

This document is equivalent to ISO 15106-7.2015 "Determination of water vapor transmission rate of plastic films and sheets - Part 7. Calcium corrosion

Law".

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 7.Calcium Corrosion

"Erosion Law".

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 plastic films and sheets provide support for performance.

"Determination of Water Vapor Transmission Rate of Plastic Films and Sheets" is adopted equally

ISO 15106."Determination of Water Vapor Transmission Rate of Plastic Films and Sheets" is planned to consist of 7 parts.

---Determination of water vapor transmission rate of plastic films and sheets Humidity sensor method (GB/T 30412-2013). The purpose is to use wet

The water vapor transmission rate of plastic films and sheets is determined by the degree sensor method.

---Determination of water vapor transmission rate of plastic films and sheets using infrared sensor method (GB/T 26253-2010). The purpose is to use red

The external sensor method determines the water vapor transmission rate of plastic films and sheets.

---Determination of water vapor transmission rate of plastic films and sheets by electrolytic sensor method (GB/T 21529-2008). The purpose is to use electricity

The solution sensor method is used to determine the water vapor transmission rate of plastic films and sheets.

---Determination of water vapor transmission rate of plastic films and sheets - Part 5.Pressure sensor method (GB/T 43019.5-2023). Head

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

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

Determination of water vapor transmission rate of plastic films and sheets

Part 7.Calcium corrosion method

1 Scope

This document specifies the determination of plastic films and sheets, composite plastic films and sheets based on the principle of calcium corrosion caused by the reaction of calcium and water.

Water vapor transmission rate.

Note. This document is suitable for rapid testing of a wide range of water vapor transmission rates.

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 specified test conditions, the mass of water vapor passing through unit area of the sample per unit time.

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

3.2

sealing material sealmaterial

Adhesive material between specimen and glass slide used to protect the calcium film from corrosive gases.

3.3

encapsulant

Encapsulating material used to protect calcium films from corrosive gases.

4 Principles

This method is based on measuring the reaction rate between metallic calcium and water. Deposit the calcium film on the sample or glass slide, and follow Appendix A, Appendix

Sealing or encapsulation by one of the three methods described in Appendix B and Appendix C. By measuring calcium film exposure in Appendix A, Appendix B and Appendix C

The changes in performance under the stated environmental conditions were calculated to

obtain the water vapor transmission rate of the sample.

5 samples

The sample should be representative, free of wrinkles, creases and pinholes, and uniform in thickness. The area of each specimen should be larger than the surface of the penetration chamber of the test unit.

product. Unless otherwise specified or agreed by relevant parties, 3 samples should be taken from each group for testing.

Note. For some products, the results of testing more than 3 samples will be more representative.

6 Sample status adjustment

Place the specimen in vacuum or inert gas. The conditioning process should comply with the technical specifications of the test material.