Electrolytic Method Water Vapor Permeability Analyzer W203 2.0

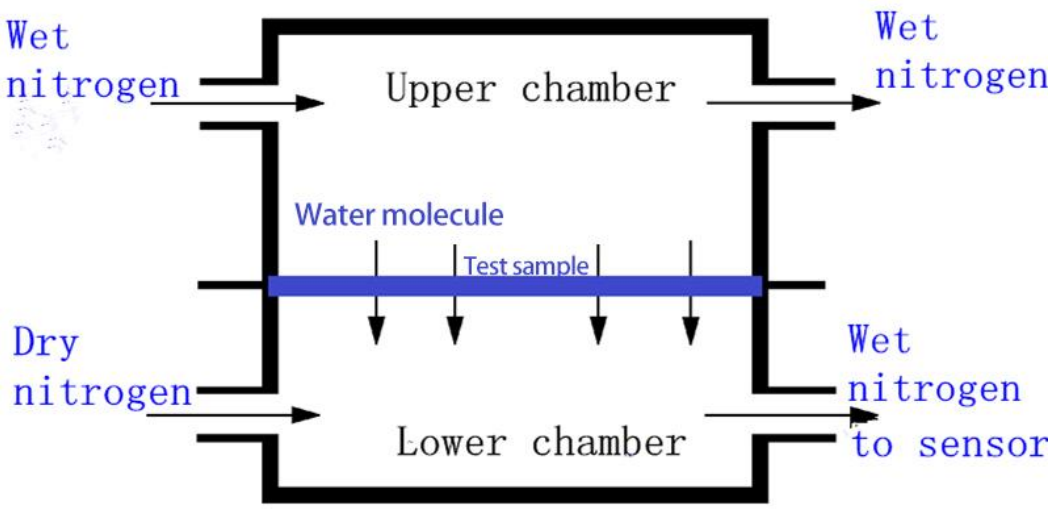
Introduction

This product is based on the testing principle of electrolysis method and is developed, designed and manufactured in accordance with ISO15106-3, GB/T 21529 and other standards. It is used to test the water vapor transmission rate (volume) of samples under set temperature and humidity conditions. It is suitable for testing the water vapor transmission performance of films, sheets, paper, packaging and various materials in the fields of food, medicine, medical equipment, daily chemicals, photovoltaic electronics, etc. It is an ideal configuration instrument for offline or online testing of the barrier properties of packaging materials by production units in the packaging industry.

Test principle

W203 2.0 Water Vapor Transmission Rate Tester adopts the principle of electrolysis. The pre-treated sample is fixed in the middle of the test chamber, and the test chamber is divided into a high humidity side and a low humidity side. Humidified nitrogen flows on one side of the film, and dry nitrogen (carrier gas) flows at a fixed retention rate on the other side. Due to the existence of humidity gradient, water vapor will penetrate from the high humidity side to the low humidity side. The water vapor that penetrates the sample is carried to the electrolytic sensor by the flowing dry

nitrogen. The water vapor transmission rate and other parameters of the sample are obtained through the electrical signal output by the sensor.



Working principle diagram of electrolysis method

Standard

ASTM E398-2013, ISO15106-3, DIN 53122-2, YBB00092003-2015, GB/T 21529-2008

Specification

Item	Technical Parameters
Test range	0.001~40g/(m2·24h) (film and sheet)
Resolution	0.0001g/(m2·24h) (film and sheet)
Temperature control range	15～45℃
Temperature control accuracy	±0.1℃
Humidity control range	（5～90）%RH
Humidity control accuracy	±1%RH

Permeable area	50.24 cm^2
Sample size	Φ100 mm
Sample thickness	≤3 mm
Sample quantity	3 pieces
Carrier gas	99.999% Nitrogen (user-provided)
Carrier gas pressure	≥0.1 MPa
Carrier gas flow	0~100 mL/min
Air source interface	1/8 inch metal tube
Dimension	670×550×400mm
Power	750 W
Power supply	AC 220 V, 50 Hz
Weight	57.1kg

Features

◆ Core technology, convenient operation and upgrade

The sensor has high sensitivity, high precision, good stability and long service life; automatic protection over range to avoid damage to important sensors when the instrument fails; the resolution reaches 0.0001g/(m2·24 h), which can measure high barrier materials such as aluminum foil.

The new pneumatic air circuit control system, the automatic clamp locks the sample with one button, which is convenient and labor-saving, and has excellent sealing performance.

◆ Precise control of temperature and humidity

Temperature control: The semiconductor refrigeration chip automatically controls the temperature in both directions, and the temperature control accuracy reaches 0.1℃.

Humidity control: Dual air flow (dry air and wet air) humidity method controls humidity, the humidity is stable, the accuracy is high, and the humidity is accurate to ±1%RH. .

◆ Meet the testing needs of high throughput, wide range and high applicability

The instrument is equipped with 3 cavities, the data is independent, which can meet the testing needs of high throughput and high testing efficiency.

The measuring range is 0.001~40 g/(m2·24h), with a wide measuring range, which can meet the testing requirements of high, medium and low barrier materials. With the addition of adapter

accessories, it can measure the water vapor permeation of containers such as bottles, bags and bowls.

◆ Excellent appearance, convenient operation and real-time visual curve

The host has an embedded 11.6-inch high-resolution color touch screen, with clear view, sensitive touch and easy operation.

The instrument is fully automatic, with one-button test, automatic judgment and automatic shutdown.

Real-time display of five groups of curves: permeation-time, temperature-time, humidity-time and concentration-time, and the curve supports preview and hide functions.

◆ Intelligent operating system, global certification

Self-developed intelligent operating system, modular graphics, flexible setting of test process parameters, and intuitive and convenient operation.

Designed according to the GMP Appendix "Computerized System", it has audit tracking function and multi-level user permission setting, which can meet the needs of the pharmaceutical industry for data traceability.

Personalized test reports are set on demand, supporting data output in multiple formats, supporting electronic signatures and online submission of audit reports.

◆ Professional calibration service, accurate and reliable data

Our company has the "National Reference Material Grading Certificate" for water vapor permeability approved and issued by the "General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China", with the reference material number (GBW(E)130543 / GBW(E)130544). The instrument is calibrated and verified using self-developed national reference materials to ensure the accuracy, universality and authority of the test data.

Application

	Film	Water vapor transmittance test of various plastic films (PP/PET/PE/PVC/BOPP/CPP, etc.), plastic composite films, paper-plastic composite films, metal composite films, co-extrusion films, aluminized films, degradable packaging films (PLA/PBAT/PBS, etc.) and other film-like materials.

	Sheet	Water vapor transmittance test of solid pharmaceutical hard sheets (PP/PVC/PTP, etc.), metal composite sheets, rubber sheets and other flakes.
	Paper, cardboard and its composites	Water vapor transmittance test of coated paper, silicone paper, cigarette bag aluminized paper, paper aluminum-plastic composite sheet and other paper and cardboard.
	Medicinal patches	Water vapor transmission performance test of medical plasters
	Package	Customizable fixtures can be extended to packages such as pharmaceutical polyethylene bottles, sealed bags, pharmaceutical ointment tubes, infusion hoses, plastic trays, etc.

Factory configuration

Standard configuration	Host, power cord, communication line, sample cutter, sealing grease, standard film, syringe, sealing ring, mouse, metal air pipe, pressure regulating valve (with pressure gauge), filter pressure regulating valve
Optional	Computer, measurement certificate, air compressor

Remark	1. High purity 99.999% or above, 40L steel cylinder filled with nitrogen 1 bottle 2. Standard laboratory environment, air-conditioned, temperature at 23℃±2℃ 3. Power supply requirements: 220V regulated power supply, three-hole three-position socket with switch 4. Computer requirements: standard configuration (Windows10, 64-bit system) 5. Laboratory technician requirements: 1-3 test operators, secondary school education or above, certain computer knowledge 6. Drying dish (all samples need to be dehydrated and degassed for 24 hours) 7. Air compressor: pressure above 0.7 MPa 8. Grounding requirements: power supply grounding is good

Note: GBPI has always been committed to the innovation and improvement of product performance and function. For this reason, product technical specifications and appearance will also be changed accordingly. The above situation will not be notified. GBPI reserves the right of modification and final interpretation.

GBPI (Guangzhou Biaoji Packaging Equipment Co., Ltd.) was established in 2002 and is located in Guangzhou Economic Development Zone. It is an enterprise integrating R&D, production, sales of packaging testing instruments, packaging equipment, modified atmosphere refrigerator and other products, and providing third-party testing and reference material calibration services. It is committed to providing comprehensive, professional, high-quality products and technical services for the packaging, food, medicine, testing and other industries.

Write industry standards with quality and become a leader and navigator in the field of global packaging testing. The 80,000-mile journey is underway, and GBPI will escort you!

Service Commitment

- Free technical support for packaging testing.
- One-year warranty for the instrument, free software upgrade service, and free technical support for life.
- Free in-plant training on instrument operation, graduation certificate issued to qualified personnel, free board and lodging.
- Instrument "old for new" policy, and spare instruments for use in case of failure.
- Equipped with a testing center (CNAS L8185), providing sample testing and sample data comparison services.
- Equipped with a reference material development center, providing calibration services.

For more details, please visit the GBPI official website. www.gbpitester.com

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