

Electrolytic Sensor Method

Water Vapor Permeability Analyzer

W203 2.0



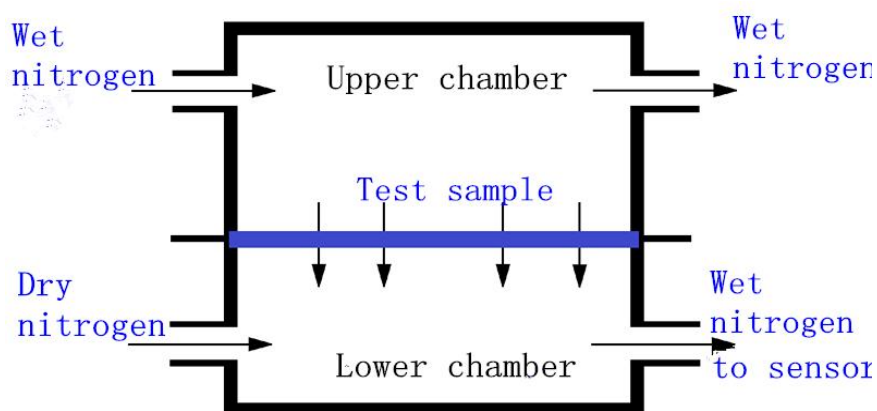
Introduction

Based on the test principle of electrolytic sensor method, W203 2.0 Water Vapor Permeability Analyzer is designed and manufactured according to GB/T 21529, ISO15106-3 standard, based on the test principle of electrolytic method.

W203 2.0 is suitable for the water vapor transmission performance test of films, sheets, papers, packages and various materials in the fields of food, medicine, medical equipment, daily chemicals, photovoltaic electronics, etc. It is an ideal configuration instrument for testing the barrier properties of packaging materials in the packaging production industry whether offline or online

Test principle

W203 2.0 Water Vapor Permeability Analyzer uses the principle of electrolytic method. The pre-treated sample is fixed in the middle of the test chamber, and the test chamber is divided into high humidity side and low wet side. Compressed air flows on one side of the film and dry nitrogen (carrier gas) flows at a fixed flow rate on the other side. Due to the presence of a humidity gradient, water vapor penetrates from the high-humidity side to the low-humidity side, and the water vapor through the sample is carried to the electrolytic sensor by flowing dry nitrogen. Parameters such as the water vapor transmittance of the sample are obtained from the electrical signal output by the sensor.



Working principle diagram

Standard

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

Specification

Item	Technical parameters
Test range	0.001~50g/(m ² ·24h) (film or sheet)
Test accuracy	0.001 g/(m ² ·24h)
Temperature	15~45°C
Temperature accuracy	±0.1°C
Humidity range	0%RH, 30~90%RH,100%RH
Humidity	±2%RH
Test area	50.24 cm ²
Sample size	Φ100 mm
Sample thickness	≤3 mm
Number of sample	3 Pieces
Carrier gas	99.999% N ₂ (user provide)
Carrier pressure	≥0.1 MPa
Carrier gas flow	0~100 mL/min
Air source interface	1/8" metal pipe
Size	670×550×400mm
Weight	57.1kg
Power	750W
Power supply	AC 220 V, 50 Hz (110V is optional)

Features

◆ Patented core technology, upgrade convenient control

The sensor has high sensitivity, high precision, good stability, and long service life, Over-range automatic protection to avoid damage to important sensors when the instrument fails. The resolution is $0.001\text{g}/(\text{m}^2 \cdot 24\text{ h})$, and it can measure high barrier materials such as aluminum foil.

New pneumatic control system, automatic fixture one-button lock sample, convenient and labor-saving, superior sealing performance.

◆ Precise control of temperature and humidity

Temperature control: Two-way automatic temperature control of semiconductor refrigerators, temperature control accuracy of $0.1\text{ }^\circ\text{C}$.

Humidity control: dual airflow (dry gas and wet gas), humidity control method, stable humidity, high precision, and humidity accurate to $\pm 2\%\text{RH}$.

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

Equipped with 3 chambers and independent data, which can meet the needs of high-throughput testing and high testing efficiency. Measuring range of $0.001\sim 50\text{ g}/(\text{m}^2\cdot 24\text{h})$, wide range, to meet the test needs of high, medium and low barrier materials, plus suitable accessories, can measure the water vapor transmission of bottles, bags, bowls and other containers.

◆ Excellent shape, convenient control, real-time visualization of curves

The host is embedded with a 11.6-inch high-resolution color touch screen, which has a clear view, sensitive control and easy to operate.

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

Real-time display of transmission - time, temperature - time, humidity - time, flow - time, voltage - time five sets of curves, curves support preview hidden function.

◆ Intelligent operating system, global certification

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



Designed according to the GMP appendix "Computerized System", it has an audit trail function and multi-level authority settings for users, which can meet the needs of the pharmaceutical industry for data traceability.




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

◆ **Professional calibration service, accurate and reliable data**

Our company has approved and issued by the "General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China": water vapor transmission rate, "National Standard Material Classification Certificate" and "People's Republic of China Manufacturing Measuring Instrument License", the standard number (GBW (E)130543 / GBW(E)130544). The instrument is calibrated and verified by the national standard material independently developed to ensure the accuracy, versatility and authority of the test data.

Application

	Film	Water vapor transmittance test of various plastic films (PP/PET/PE/PVC/BOPP/PP, 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.

	<p>Paper, cardboard and its composites</p>	<p>Water vapor transmittance test of coated paper, silicone paper, cigarette bag aluminized paper, paper aluminum-plastic composite sheet and other paper and cardboard.</p>
	<p>Medicinal patches</p>	<p>Water vapor transmission performance test of medical plasters</p>
	<p>Package</p>	<p>Customizable fixtures can be extended to packages such as pharmaceutical polyethylene bottles, sealed bags, pharmaceutical ointment tubes, infusion hoses, plastic trays, etc.</p>

Factory configuration

<p>Standard configuration</p>	<p>Power cord, communication line, sample cutter, sealing grease, ferrule connector, standard configurationdard membrane, hexagon socket wrench, syringe, sealing ring, syringe sealing ring, fork wrench, cross screwdriver, air pipe, adapter substitute, pressure gauge, oily water separator, air compressor Tie-in, mouse, wooden case, metal gas pipe.</p>
<p>Optional</p>	<p>Computer, calibration certificate</p>
<p>Remark</p>	<ol style="list-style-type: none"> 1. High purity over 99.999%, 1 bottle of nitrogen in a 40-liter steel cylinder. 2. Standard laboratory environment, With air conditioning, the temperature is $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$. 3. Power requirements: 220 V regulated power supply, one socket with three holes and three switches. 4. Computer requirements: standard configuration (Windows 10, with a nine-pin serial port). 5. Requirements for experimenters: 1-3 test operators, technical secondary

	<p>school or above, with certain computer knowledge.</p> <p>6. Drying dish (all samples need to be dehydrated and degassed for 24 hours).</p> <p>7. Air compressor (Pressure above 0.7 MPa)</p> <p>8. Grounding requirements: the power supply is well grounded.</p>
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Note: Guangzhou Biaoji 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. The company reserves the right of modification and final interpretation.

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