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Analysis & Testing Instruments



Coulometric Sensor Method Oxygen Permeability Analyzer Y110L

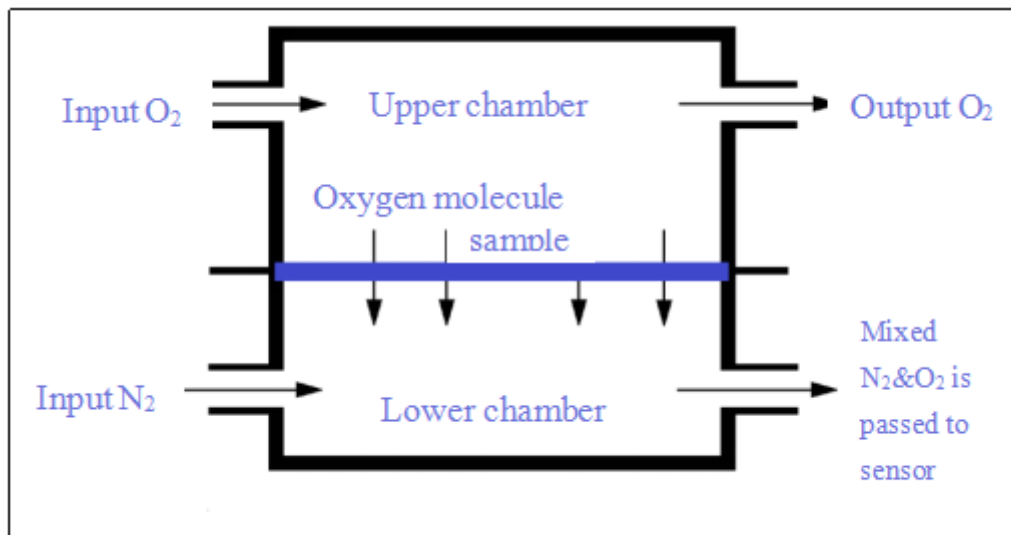


Introduction

Y110L is based on the test principle of coulometric oxygen sensor, and is designed and manufactured with reference to GB/T 19789, ASTM D3985 and other standards. Adopting high-precision imported oxygen sensor, this tester has high test accuracy. It is suitable for the oxygen permeability test of films, sheets, papers, packages and related materials in the fields of food, medicine, medical devices, daily chemicals, photovoltaic electronics, etc. It provides high-efficiency oxygen transmission rate detection for a wide range of high, medium and low oxygen barrier materials.

Test principle

Y110L Oxygen Transmission Rate Tester adopts the principle of coulometric sensor method. The pre-treated sample is fixed in the middle of the test chamber, high-purity oxygen flows in the upper chamber of the film, high-purity nitrogen (carrier gas) flows in the lower chamber, oxygen molecules diffuse through the film into nitrogen on the other side, and carried to the sensor by the flowing nitrogen. And the oxygen transmission rate is calculated by analyzing the oxygen concentration measured by the sensor.



Schematic diagram for Coulometric sensor method

Standard

ASTM D3985, ASTM F2622, ASTM F1927, ASTM F1037, ISO 15105-2, JIS K-7126-B,
DIN 53380-3, GB/T 19789, YBB 00082003

Specification

Item	Technical Parameters
Test range	0.05~1000 cm ³ / (m ² ·24h·0.1MPa), (up to 260000 cm ³ / (m ² · 24h· 0.1MPa) can be measured through the clamp)
Resolution	0.0001 cm ³ / (m ² ·24h·0.1MPa)
Temperature control range	15~45°C
Temperature control accuracy	±0.2°C
Humidity control range	0%RH, 5~90%RH, 100%RH
Humidity control accuracy	± 2%RH
Permeable area	50.24 cm ² (Custom fit accessories, minimum to 0.785 cm ²)
Sample size	Φ100 mm
Sample thickness	≤3 mm
Sample quantity	1 piece
Carrier gas pressure	≥0.1 MPa
Carrier gas flow	5~100 mL/min
Dimension	380 mm×545 mm×315 mm
Power	450 W
Power supply	AC 220 V, 50 Hz

Features

- ◆ Patented core technology, efficient and accurate testing

High-precision imported oxygen sensor with high sensitivity, ultra-high stability and ultra-low failure rate, with a resolution of $0.0001 \text{ cm}^3/(\text{m}^2 \cdot 24\text{h} \cdot 0.1\text{MPa})$.

◆ **The test data is accurate and reliable**

Precise control of test temperature and humidity. Equipped with a high-precision temperature and humidity sensor, the temperature and humidity of the test chamber are stable, the temperature control accuracy can reach 0.2°C , and the humidity can be accurate to $\pm 2\% \text{RH}$.

Automatic test mode, real-time monitoring of temperature, humidity, gas flow values and curves during the test process, high test repeatability.

◆ **Ultra-wide test range, high instrument applicability**

The instrument is equipped with a single cavity, which is compact and flexible, saving space.

The ultra-wide test range [$0.05 \sim 1000 \text{ cm}^3/(\text{m}^2 \cdot 24 \text{ h} \cdot 0.1 \text{ MPa})$] meets the test requirements of high, medium and low barrier materials. With the addition of adapter accessories, it can measure the oxygen transmission rate of bottles, bags, bowls and other containers.

◆ **Intelligent operating system, global certification**

Self-developed intelligent operating system, modular icons, stylish color matching, humanized settings, intuitive and convenient operation.

According to the GMP appendix computer system design, the test process parameters can be flexibly set to meet the requirements of different standards.

With audit trail (log trace, test trace) function, it can meet the needs of data traceability. Different levels of system operation authority can be set.






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





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

Our company has the gas transmission rate "National Standard Substance Grading

Certificate" approved and issued by the "General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China", the reference material number (GBW(E) 130497 / GBW(E) 130498); The national reference material is used to calibrate and test the instrument to ensure the accuracy, versatility and authority of the test data.

Application

	<p>Film</p>	<p>Oxygen transmission rate 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.</p>
	<p>Sheet</p>	<p>Oxygen transmission rate test of solid pharmaceutical hard sheets (PP/PVC/PTP, etc.), metal composite sheets, rubber sheets and other flakes.</p>
	<p>Paper, cardboard and its composites</p>	<p>Oxygen transmission rate 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>Oxygen transmission rate test of medical plasters</p>
	<p>Hygiene products</p>	<p>Oxygen transmission rate test of sanitary products such as sanitary napkins and panty liners</p>

	<p>Packaging</p>	<p>Wine bottles, Coke bottles, peanut oil barrels, Tetra Pak packaging, vacuum packaging bags, three-piece cans, cosmetic packaging, toothpaste tubes, jelly cups, yogurt cups, etc. Plastic, rubber, paper, paper-plastic composite, glass, metal bottles Oxygen transmission rate test of bags, cans, boxes and barrels.</p>
	<p>Package closure</p>	<p>Oxygen transmission performance test of various package closures</p>
	<p>Solar backplane</p>	<p>Oxygen transmission performance test of solar backsheet</p>
	<p>Pipes</p>	<p>Oxygen permeability test of pipes made of various materials</p>

Factory configuration

<p>Standard configuration</p>	<p>Power line, communication line, sample cutter, sealing grease, metal air tube, terminal ferrule joint, terminal ferrule joint, reference material, special</p>
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	wrench, syringe, sealing ring, fork wrench, Phillips screwdriver, mouse
Optional	Computer, measurement certificate
User provide	<ol style="list-style-type: none"> 1. Standard laboratory environment; 2. Power requirements: 220V regulated power supply with three holes and three positions with a switch socket; 3. Computer requirements: standard configuration (Windows10, with a nine-pin serial port); 4. One bottle of oxygen, the purity must be above 99.999%, with a pressure reducing valve, and the output range is 0-0.4 Mpa; 5. One bottle of nitrogen, the purity must be above 99.999%, with a pressure reducing valve, the output range is 0-0.4 Mpa.

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.



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