

S401 Oxygen Transmission Rate Tester

S401 Oxygen Transmission Rate Tester is manufactured based on the coulometric sensor method and is applicable to test the oxygen transmission rate test of high barrier materials.

Product Features

- High precise coulometric sensor.
- One independent test chamber can test one sample for each test.
- The stability of the temperature ensures the consistency of test conditions of chambers (optional) .
- High-precise and automatic control system of temperature can be used under different conditions.
- The data can be stored and extract in multi-format (including reports in excel and cloud sharing).
- GMP management of user's three-level authority complies with international standards.
- The instrument processes statistical analysis of single and group data.
- Equipped with ISP control online and upgrade function.
- Specialized communicating software can display in real-time, analyze and store data.



Test Principle

The pre-conditioned specimen is mounted between the upper and lower chambers at ambient atmospheric pressure. One chamber contains oxygen or air and the other chamber is slowly purged by a stream of nitrogen. Due to the concentration difference between the two chambers, oxygen molecules permeate through the specimen into the nitrogen side and are taken to the coulometric sensor where proportional electrical signals are generated. The oxygen transmission rate is then obtained by analyzing and calculating the signals. For package samples, high purity nitrogen flows inside the package, and oxygen or air flows outside.

Test Standards

ISO 15105-2, GB/T 19789, ASTM D3985, ASTM F2622, ASTM F1307, ASTM F1927, JIS K7126-2,

YBB 00082003

Application

Basic Application	Film	Including plastic films, plastic composite films, paper-plastic composite films, coextruded films, aluminized films, aluminum foils, aluminum foil composite films and many others
	Sheeting	Including engineering plastics, rubber and building materials, e.g. PP, PVC and PVDC
Extended Application	Various Gases	Test the permeability of various types of gases, e.g. O ₂ , CO ₂ , N ₂ , Air and He
	Inflammable Explosive Gases	Test the permeability of inflammable and explosive gases
	Biodegradable Films	Test gas permeability of various sorts of biodegradable films, e.g. starch-based biodegradable bags
	Materials for Aerospace Usage	This instrument can test the Helium permeability of airship gas bags
	Paper and Paper Board	Test gas permeability of paper and paper-plastic composite materials, e.g. aluminized paper for cigarette packages, Tetra Pak sheeting, paper bowls for instant noodles and disposable paper cups
	Paint Films	Test gas permeability of substrates coated paint films
	Glass Fiber Cloth and Paper	Including glass fiber cloth and paper materials, e.g. Teflon paint cloth, Teflon welding cloth and Teflon silicon rubber cloth
	Soft Tube Materials for Cosmetics	Including various types of cosmetic tubes, aluminum-plastic tubes and toothpaste tubes
	Rubber Sheeting	Including various sorts of rubber sheeting, e.g. car tires

Technical Data Sheet

Test Range	0.1 ~ 10000 cc/(m ² ·day)
Number of Specimen	1
Resolution	0.0001 cc/(m ² ·day)
Range of Temperature	10°C ~ 60°C (Optional)
Accuracy of Temperature	±0.1°C

Test Area	50 cm ²
Sample Size	97 mm × 97 mm (Customization is available for other size)
Sample Thickness	≤ 3 mm (Customization is available)
Tested Gas	99.5% Oxygen (Prepared by customer)
Carrier Gas	99.999% high purity Nitrogen (Prepared by customer)
Gas scourse Pressure	7.2 PSI / 50 kPa
Port Size	1/8-inch Metal Tube
Dimension	400 mm (L) × 475 mm (W) × 450 mm (H)
Weight	25kg
Power	220V 50Hz

Technical Data Sheet (Container) (Optional)

Parameter/Model		S401
Test Range	cc/pkg·day	0.0005 ~ 50
Resolution	cc/pkg·day	0.0001
Temperature Range	°C	Room Temperature ~ 60 (Optional)
Temperature Resolution	°C	0.1

Configurations

Standard: Instrument, Professional Software, Communication Cable, Sample Cutter.

Optional: Reference Film, temperature control device.

Note: 1. The air connection of the instrument is 1/8-inch Metal Tube.

2. Customers need to prepare air sources and distilled water.

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