

C101B Gas Permeability Test System is based on the differential pressure method, and is professionally applicable to the determination of gas transmission rate of plastic films, composite films, high barrier materials, sheets, and metal foils at different temperatures. The test system conforms to GB, ISO, ASTM and other international standards.



Features ^{note1}

- Applicable to testing the permeability of various gases (exclude flammable, explosive and other hazardous gases)
- Support temperature control to satisfy tests under different conditions (optional)
- The processes of vacuumizing, pressure maintaining, start test and end test are automated.
- Automatic and manual test mode.
- Built-in high-quality stainless steel test cell with better sealing performance.
- Imported manual isolation valve is adopted for better sealing performance and lower failure rate
- Industrial computer appearance design, small size and fast cooling
- Reference film is provided for quick calibration
- The system adopts single-chip microcomputer control and can run independently
- The test report can be exported in common formats such as EXCEL and PDF
- Support micro printer, automatically print test data (optional)
- Equipped with RS232 data interface, which can be connected to computer software for curve analysis, data storage, report printing, etc. (optional)

Test principle

The pre-conditioned specimen is mounted in the test cell as to form a sealed barrier between two chambers. The lower-pressure chamber (lower chamber) is firstly evacuated, followed by the evacuation of the entire cell. A flow of gas is thereafter introduced into the evacuated higher-pressure chamber (upper chamber) and a constant pressure (adjustable) difference is generated between the two chambers. The gas permeates through the specimen from higher pressure side into the lower pressure side. The gas permeability of the specimen can be obtained by analyzing the pressure changes in the lower chamber.

Standards

ISO 15105-1、ISO 2556、GB/T 1038-2000、ASTM D1434、JIS K7126-1、YBB 00082003

Applications

Applications	Films	Gas transmission rate test of various plastic films, paper-plastic composite films, coextruded films, aluminized films, aluminum foils, aluminum foil composite films, glass fiber aluminum foil composite films and many others
	Sheets	Gas transmission rate test of PP, PVC and PVDC sheets, metal foils, rubber pads, silicon wafers and other sheet materials

Technical specifications

Table 1: Test parameters^{note2}

Parameters/Model		C101B
Test range	cm³/ m²•24h•0.1MPa	0.1~5,000
Resolution	cm³/ m²•24h•0.1MPa	0.01
Test temperature	℃	15~50 (Optional)
Temperature resolution	℃	0.1
Temperature fluctuation	℃	±0.5
Vacuum Resolution	Pa	1
Vacuum Degree of Test Chamber	Pa	≤ 20
Pressure difference	kPa	101
Additional Functions	GMP Computer System requirement	Optional
	TC03 Temperature control device	Optional

Table 2: Technical specifications

Test Cell	1 Cell
Specimen Size	3.8" x 3.8" (9.7cm×9.7cm)
Specimen Thickness	≤120 Mil (3mm)

Standard test area	38.48cm ²
Test Gas	O ₂ 、 N ₂ 、 CO ₂ etc. (Outside of supply scope)
Gas Pressure	72.5 PSI / 500 kPa
Port Size	Φ6 mm PU tubing
Instrument Dimension	12.9” H x 16.9” W x 15.7” D (33cm×43cm×40cm)
Power Supply	120VAC±10% 60Hz / 220VAC±10% 50Hz (one of two)
Net Weight	50Lbs (23kg)

Table 3: Product Configuration

Standard Configuration	Instrument mainframe, vacuum pump (China), sampler, vacuum grease, Φ6 mm PU tubing
Optional Parts	Professional software, TC03 temperature control device, GMP Computer System requirement, Micro-printer

Note 1: The described product functions are subject to the specification in "Technical Parameters" "Table 1: Test Parameters".

Note 2: The parameters in the table are measured in Labthink laboratory by professional operators according to the requirements and conditions stipulated in laboratory environmental standards.

✧ Labthink is always committed to the innovation and improvement of product performance and functions. For this reason, product technical specifications are subject to changes without further notification. Labthink reserves the right of modification and final interpretation.