# G101H Gas Permeability Tester

G101H is based on the differential pressure method, and is professionally applicable to the determination of gas transmission rate as well as solubility coefficient, diffusion coefficient and permeability coefficient of plastic films, composite films, high barrier materials, sheeting, metal foils, rubber, tires and permeable membranes.

## Product Features

- Permeance and permeability are tested simultaneously.
- Touch screen interface is more convenient to operate.
- High precision and wide range of temperature to meet different test conditions
- The instrument comes with three test modes: proportional mode, standard mode and time mode
- Test range could be extended based on user requirements to test materials with high permeability
- Pneumatic sample clamp system assured the reliability of the test and improves sealing and avoids manual error.
- The instrument is controlled by PLC control system and test process is automatic
- Reference film for fast calibration to ensure accurate and universal test data
- Intelligent electronic system controls the whole test automatically.
- Complied with GMP users' three-level authority.
- Specialized software is used to display the real-time test, analyze, and store data.
- Micro-printer and USB.

## Test Principle

The pre-conditioned specimen is mounted in the gas diffusion cell as to form a sealed barrier between two chambers. The lower-pressure 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 and a constant pressure difference is generated between two chambers. The gas permeates through the specimen from the higher pressure side into the lower side. The gas permeability and other barrier properties of the specimen can be obtained by monitoring the pressure changes in the lower chamber.

## Test Standards

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

## Application

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| **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 |

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| | 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 Date Sheet**

| Specification | **Film Test** |
|---|---|
| **Test Range** | 0.05 ~ 50,000 $cm^3/m^2$·24h·0.1MPa（Standard） |
| | At least 60,000 $cm^3/m^2$·24h·0.1MPa（Extended） |
| **Number of Specimen** | 1pc |
| **Vacuum Resolution** | 0.05 Pa |
| **Vacuum Degree of Test Chamber** | <10 Pa |
| **Temperature Range** | Ambient ~ 95°C（Standard)<br>（5~95°C Optional） |
| **Temperature Accuracy** | ±0.1°C |
| **Sample Size** | Φ 95 mm |
| **Test Area** | 33.18 $cm^2$ |

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|---|---|
| **Test Gas** | $O_2$、$N_2$、$CO_2$ etc (out of supply scope） |
| **Test Pressure** | 0.1 MPa ~ 0.15 MPa |
| **Gas Supply** | 0.4 MPa ~ 0.6 MPa |
| **Port Size** | Φ6 mmPU tubing |
| **Instrument Dimension** | 400 mm (W) × 450 mm (D) × 420 mm (H) |
| **Power Supply** | AC 220V 50Hz |
| **Net Weight** | 30 kg |

**Configuration**

Standard：Instrument, Round Sample Cutter, Fast Quantitative Filter Paper、Vacuum Pump, temperature control device, micro printer

Optional：Blades for Sample Cutter, Vacuum Grease, Fast Quantitative Filter Paper

Note:

1. The gas supply port of the instrument is Φ6 mm PU Tubing;
2. Customers will need to prepare for gas supply and distilled water.

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