G103H Gas Permeability Tester

G103H is based on the differential pressure method, and is professionally applicable to the determination of gas transmission rate as well as 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.
- The 3 test chambers can test 3 same or different samples simultaneously with the independent test results.
- High precision and wide range of temperature control 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
- The instrument could be used to test poisonous, inflammable, and explosive gases (customization required)
- 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

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 Date Sheet

Specification	**Film Test**
Test Range	0.01 ~ 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	1 ~ 3 pcs
Vacuum Resolution	0.05 Pa
Vacuum Degree of Test Chamber	<10 Pa
Temperature Range	5°C ~ 95°C
Temperature Accuracy	±0.1°C
Sample Size	Φ95 mm

Test Area	33.18 cm^2
Test Gas	O_2、N_2、CO_2 etc (out of supply scope）
Test Pressure	0.1 MPa ~ 0.26 MPa
Gas Supply	0.4 MPa ~ 0.6 MPa
Port Size	Φ6 mmPU tubing
Instrument Dimension	600 mm (L) × 550 mm (W) × 500 mm (H)
Power Supply	AC 220V 50Hz
Net Weight	60 kg

Configuration

Standard：Instrument, Round Sample Cutter, Fast Quantitative Filter Paper, Vacuum Pump.

Optional：Vacuum Grease ,Temperature Control Device , 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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