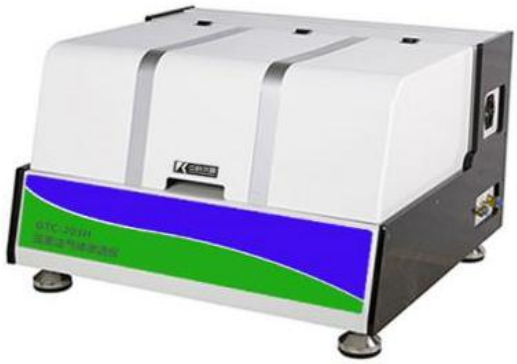
Gas Permeability Tester

GTC-203H



GTC-203H Based on the test principle of the differential pressure method, it is a professional gas permeability tester for thin film samples. Determination of transmittance, solubility coefficient, diffusion coefficient and permeability coefficient.

Product Features

- Can simultaneously measure the gas permeability, solubility coefficient, and diffusion coefficient of the sample
- The instrument can realize the complete independence of three test chambers, and can test three same or different samples at the same time
- Adopt imported high-precision vacuum sensor and pressure sensor
- The system has self-test ability to avoid continuous testing under fault conditions
- The test range can be expanded as needed to meet the requirements of high transmittance test
- High-precision water bath temperature control system, automatic control of heating and cooling, wider and more accurate temperature control range; parallel operation, higher reliability;
- Patented limit zero point and sealed piping system, using baseline technology to remove system errors and make test results more accurate
- Unique design of sample anti-side leakage structure makes the installation and sealing of the sample more stable and reliable
- Precise pressure control capability and pressure holding function

- Using high-quality components from internationally renowned brands to ensure the stability and reliability of instrument operation
- High-speed vacuum capability, reducing vacuum time, more thorough degassing, and improving test accuracy and test efficiency
- The instrument can realize the test of toxic gas and flammable and explosive gas (requires modification)
- The instrument can realize the gas permeability test under unconventional pressure (need to be modified)
- The instrument has the function of saving when power off to ensure the safety and integrity of the test
- Full-process monitoring and automatic recording, the test process can be reproduced in the whole process

Test principle

Based on the test principle of the differential pressure method, the pre-treated sample is placed between the upper and lower test chambers and clamped. First, vacuum the low-pressure chamber (lower chamber), and then evacuate the entire system; when the specified vacuum degree is reached, close the lower test chamber, fill the high-pressure chamber (upper chamber) with a certain pressure of test gas, and ensure that the A constant pressure difference (adjustable) is formed on both sides of the sample; in this way, the gas will infiltrate from the high pressure side to the low pressure side under the action of the pressure difference gradient. Barrier parameters.

Reference

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

Application

Basic	
Film	It is suitable for gas permeability test of various plastic films, plastic composite films, paper-plastic composite films, co-extruded films, aluminized films, aluminum foils, aluminum foil composite films, etc.
Plate	It is suitable for gas permeability test of various engineering plastics, rubber, building materials and other sheet materials, such as PP sheet, PVC sheet, PVDC sheet, etc.
Extended application	

Flammable and explosive gas	It is suitable for testing the barrier properties of various films to flammable and explosive gases
Biodegradable film	Suitable for air permeability testing of biodegradable films, such as starch biodegradable bags, etc.
paper and cardboard	It is suitable for air permeability test of composite materials such as paper and paper-plastic, such as aluminum foil paper for cigarette packs, Tetra Pak packaging sheets, instant noodle paper bowls, disposable paper cups, etc.
Fiberglass cloth, fiberglass paper	Suitable for air permeability test of glass fiber cloth, glass fiber paper and other materials, such as Teflon varnished cloth, Teflon high temperature cloth, fluorosilicone cloth, etc.

Technical Parameters

Items	Parameters
Test range	0.05 ～ 50.000 cm3/m2・24h・0.1MPa
	500,000 cm3/m2・24h・0.1MPa customizable
Temperature range	5 ～ 95° C （water temperature control）
Temperature accuracy	±0.1° C
Pressure resolution	0.1 Pa
Vacuum	< 20 Pa
Sample quantity	3 pieces
Sample diameter	Φ97 mm
Sample thickness	≤ 5 mm
Test gas	O2、N2、CO2 (prepared by customer）
	CH4、H2 customizable
Test pressure	-0.1 MPa～+0.1 MPa（customizable）
Gas source	0.4 MPa～0.6 MPa

Connection tube	Φ6 mm PE
Dimention	765mm (L)×440mm (W)×470mm (H)
Power	AC 220 V 50 Hz
N.W.	62kg

Configuration

Standard： Host, micro printer, vacuum pump, vacuum bellows, gas hose, pressure reducing valve, disc sampler, vacuum grease

Optional： Sampling blade, vacuum grease, vacuum pump oil, fast quantitative filter paper, non-standard fixture

Remarks: The air source inlet of the machine is Φ6mm polyurethane pipe; the test air source is provided by the user