

VAC-VBS is based on the differential pressure method, and is professionally applicable to the determination of gas transmission rate of films, sheeting, high barrier materials and aluminum foils.

Professional Technology

- The GTRs of various films for distinct gases are testable
- Tests 3 equivalent specimens at one operation and exports test results in average value
- Equipped with temperature control device(optional parts) to meet various test conditions
- The instrument comes with two test modes: proportional mode and standard mode
- The system is controlled by computer and test process is automatic
- Reference film for fast calibration to ensure accurate and universal test data
- Equipped with RS232 port for convenient data transfer
- Supports Lystem™ Lab Data Sharing System for uniform management of test results and test reports



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.

This test instrument conforms to the following standards:

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

Applications

This test instrument is applicable to the determination of gas permeability of:

Basic Applications	Films	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 Applications	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 Specifications

Specifications	Film Test
Test Range	0.05 ~ 100,000 cm ³ /m ² ·24h·0.1MPa (standard)
Number of Specimens	3
Vacuum Resolution	0.1 Pa
Vacuum Degree of Test Chamber	< 20 Pa
Test Temperature	15°C ~ 55°C ±0.5°C (constant temperature controller is optional)
Specimen Size	Φ80 mm
Test Area	28.27cm ²
Test Gas	O ₂ , N ₂ , and CO ₂ (outside of supply scope)
Test Pressure	-0.1 MPa ~ +0.1 MPa (standard)
Gas Supply Pressure	0.4 MPa~0.6 MPa
Port Size	Φ6 mm PU Tubing
Instrument Dimension	670 mm (L) x 490 mm (W) x 350 mm (H)
Power Supply	220VAC 50Hz / 120VAC 60Hz
Net Weight	57 kg

Configurations

Standard Configurations	Instrument, Professional Software, Round Sample Cutter, Vacuum Grease, Fast Quantitative Filter Paper and Vacuum Pump
Optional Parts	Constant Temperature Control Device, Blades for Sample Cutter, Vacuum Grease and 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.

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