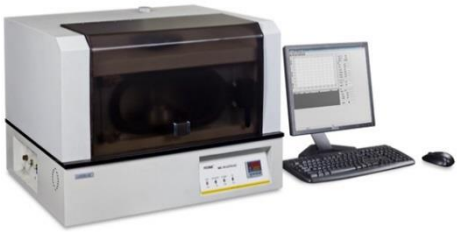
VAC-V1 is based on the differential pressure method, and is professionally applicable to the determination of gas transmission rate as well as solubility coefficient, diffusion coefficient and permeability coefficient of plastic films, composite films, high barrier materials, sheeting, metal foils, rubber, tires and permeable membranes.



Professional Technology

- Gas transmission rate, solubility coefficient, diffusion coefficient, and permeability coefficient of the specimen could be obtained at one operation
- The instrument comes with two test modes: proportional mode and standard mode
- Test range could be extended based on user requirements to test materials with high permeability
- High precision temperature control to meet different test conditions
- Test results could be easily obtained even at extreme condition by data fitting function, which could work at any temperature
- The instrument could be used to test poisonous, inflammable, and explosive gases (customization required)
- The instrument is controlled by computer and test process is automatic
- Reference film for fast calibration to ensure accurate and universal test data
- Fast-access calibration ports for temperature and humidity, and standard RS232 port for convenient calibration and 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 the 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 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 volume)
	At least 600,000 cm^3/m^2·24h·0.1MPa (extended volume)
Number of Specimens	1
Vacuum Resolution	0.1 Pa
Vacuum Degree of Test Chamber	<20 Pa
Test Temperature	Room temperature ~ 50℃ ±0.5℃
Specimen Size	Φ97mm
Test Area	38.48 cm^2 (Φ70 mm)
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	680 mm (L) x 565 mm (W) x 550 mm (H)
Power Supply	220VAC 50Hz / 120VAC 60Hz
Net Weight	130 kg

Configurations

Standard Configurations	Instrument, Professional Software, Round Sample Cutter, Vacuum Grease, Fast Quantitative Filter Paper and Vacuum Pump (Imported)

Optional Parts	Blades for Sample Cutter, Vacuum Grease, Vacuum Pump Oil 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.

Please Note: Labthink is always dedicated to the innovation and improvement of product performance and function. Therefore, technical specifications are subject to change without further notice. Please visit our website at www.labthink.com for the latest updates. Labthink reserves the rights of final interpretation and revision.