PERME® VAC-V1 Gas Permeability Tester

PERME VAC-V1 Gas Permeability Tester is applicable in the measurement of gas permeability rate, solubility coefficient, diffusion coefficient and permeability coefficient at various temperature of plastic films, laminated films, high barrier material, sheets, foils and rubber, including breathable film and tyre seal performance, etc.

**Characteristics**

- Computer control, full automatic testing;
- Diffusion coefficient, solubility coefficient and permeability coefficient measurement.
- Two testing modes of proportional and non-proportional;
- Measure range can be extended by software.
- Data curvefitting function at any temperatures;
- Can be extended to cover the tests for poisonous and explosive gases;
- Rapid calibration with reference film;
- Temperature and humidity testing port;
- RS232 interface;
- Network transmission interface for LAN data management and Internet data transmission.

**Principle**

Put the pre-conditioned specimen between the upper chamber and chamber, clamp it tightly. First vacuumize the low-pressure chamber (lower chamber), and then the whole system. When the specified degree of vacuum is achieved, shut off the lower test chamber and feed test gas to the upper test chamber (high pressure chamber) until certain pressure is reached. Ensure that a constant differential pressure (adjustable) is maintained across the specimen. Hence under the gradient of differential pressure the test gas permeates from the high-pressure side to the low-pressure side. By monitoring and measuring the pressure in the low-pressure side we can get various barrier parameters of the tested specimen.

**Technical Indexes**

- **Test Range:** 0.1~100,000 cm³/m²•24h•0.1MPa (Routine)  
  Upper limit is no less than 600,000 cm³/m²•24h•0.1MPa (Extension volume)

**Note:** Different mode volume are selected by software.

- **Temperature Control Range:** room temperature ~ 50°C
- **Temperature accuracy:** ±0.1°C
- **Vacuum Resolution:** 0.1Pa
- **Vacuum Degree of testing chamber:** <20Pa
- **No. of specimen:** 1 piece
- **Specimen Size:** Φ97mm
- **Transmission Area:** 38.48cm² (Diameter 70mm)
- **Test Gas:** O₂, N₂ and CO₂, etc. (Users provide gas sources themselves)
- **Test Pressure:** -0.1MPa~+0.1MPa
- **Gas Source Pressure:** 0.4MPa~0.6MPa
- **Inlet Size:** Φ6mm polyurethane pipe
- **Dimensions:** 680mm(L) x 565mm(B) x 550mm(H)
- **Power:** AC 220V 50Hz
- **Net weight:** 130kg

**Standards**

- ASTM D 1434, ISO 2556, ISO 15105-1, JIS K 7126-A, GB 1038, YBB 00082003

**Configuration**

- **Standard:** Mainframe, software, sampling cutter, vacuum grease, filter paper, vacuum pump.
- **Optional:** blades, vacuum grease, vacuum pump oil, filter paper.
- **Note:** Users provide test gas cylinder for themselves.
  It is better to use server instead of the common computer.
  Φ6mm PU pipe is equipped to connect the unit to gas resource.