

Microflow Porometer

Description

The PMI Microflow Porometer is a Capillary Flow Porometer with the ability to measure pore structure and permeability in nearly impermeable materials. This instrument is user-friendly and fully automated. The Microflow Porometer is an asset in quality control and R&D environments.

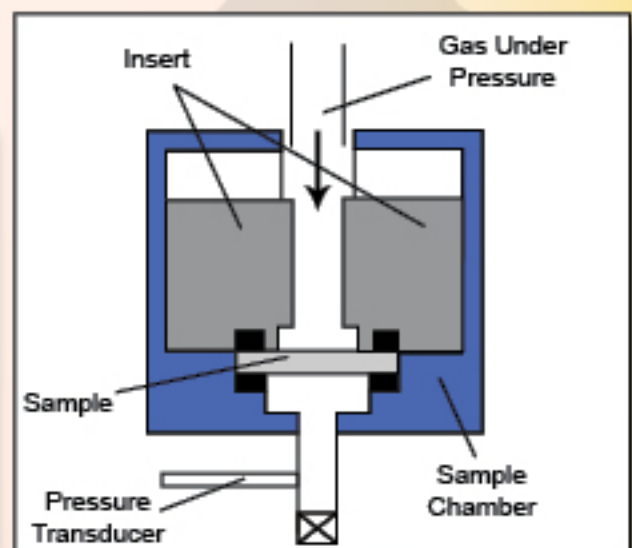
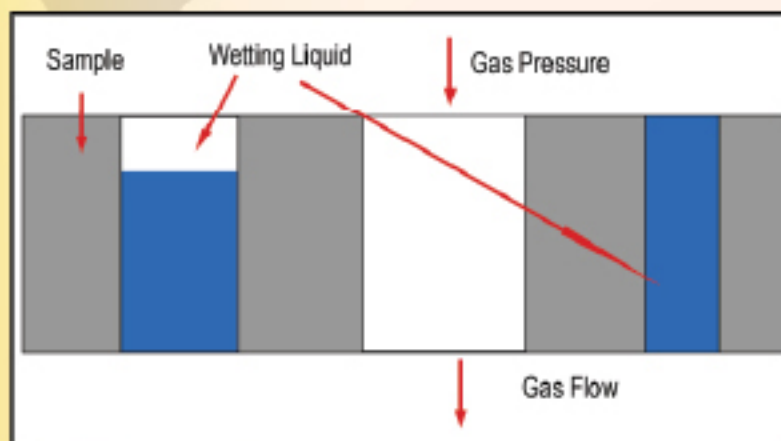
Principle

In this instrument a pressure transducer is located on the downstream side of the sample and the time rate of pressure change in the known volume of the down stream side of the sample chamber is used to compute very small flow rates.

$$F = (V_0 T_s / T P_s) (dP / dt)$$

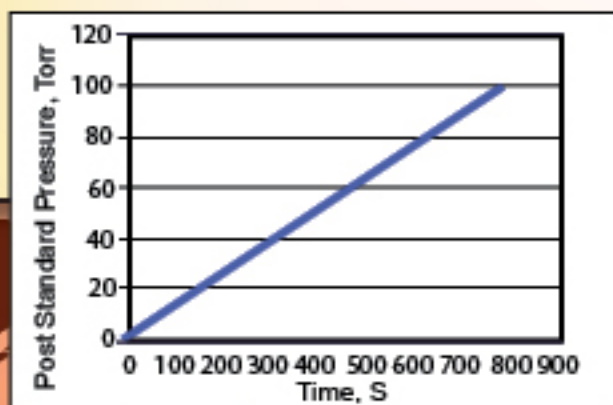
Where F is flow rate at standard temperature, T_s , and standard pressure, P_s . V_0 is the volume of the down stream side of the sample chamber, T is test temperature, t is time, and P is test pressure. Flow rate through dry sample is measured with increasing differential pressure. The sample is wetted and flow rate is measured as a function of differential pressure, p , which is related to pore diameter, D , contact angle, θ , and surface tension, γ .

$$p = 4 \gamma \cos \theta / D$$

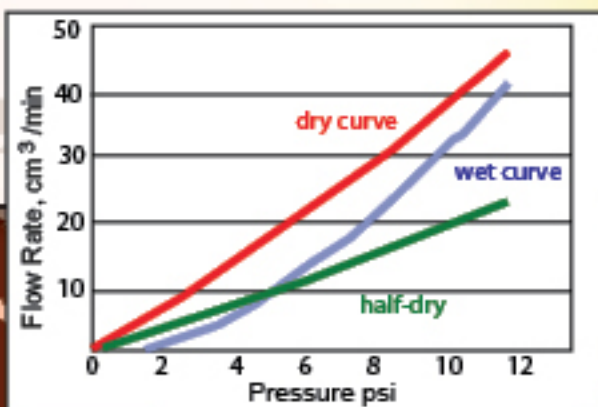


Features

- Samples permitting very low flow rate can be tested
- Very low permeability can be measured
- Fully automated
- Windows based simple operation



- Many optional features possible:
 - Sample under compressive stress
 - Elevated Temperature test
 - Determination of In-Plane Structure



Specifications

Pore Size Range: 0.013 - 500 microns
Permeability Range: 1×10^{-10} - 1×10^{-6} (microflow in cc/sec/m/torr)
Sample Size: 0.5" - 2.5" diameter
Pressure Transducer Range: 0 - 500 psi
Resolution: 1 in 20,000
Accuracy: 0.15% of reading

Pressurizing Gas: Clean, dry, and compressed air or nonflammable and non-corrosive gas
Mass Flow Transducer Range: 10 cm³ /min - 500,000 cm³ /min
Power Requirements: 110/120 VAC, 50/60 Hz (Others Available)
Dimensions: 30" H x 19" W x 18.5" D
Weight: 100 lbs.

Other Products

Average Fiber Diameter Analyzer
Bubble Point Tester
Capillary Flow Porometer
Capillary Condensation Flow Porometer
Complete Filter Cartridge Analyzer
Clamp-On Porometer
Compression Porometer
Custom Porometer
Cyclic Compression Porometer
Envelope Surface Area Analyzer
Filtration Media Analyzer
High Flow Porometer
Integrity Analyzer

In-Plane Porometer
Microflow Porometer
Nanopore Flow Porometer
QC Porometer
Diffusion Permeameter
Gas Permeameter
Liquid Permeameter
Vapor Permeameter
Water Vapor Transmission Analyzer
Liquid Extrusion Porosimeter
Mercury/Nonmercury Intrusion Porosimeter
Vacuapore
Water Intrusion Porosimeter (Aquapore)

BET Liquisorb
BET Sorptometer
Gas Pycnometer
Mercury Pycnometer

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