

HIGH FLOW CARTRIDGE TESTER

FOR BUBBLE POINT & LIQUID PERMEABILITY

APPLICATION

The instrument is specially designed for the determination of bubble point and liquid permeability of high flow cartridges. The multiple sample chambers allow for a high volume testing of cartridges.

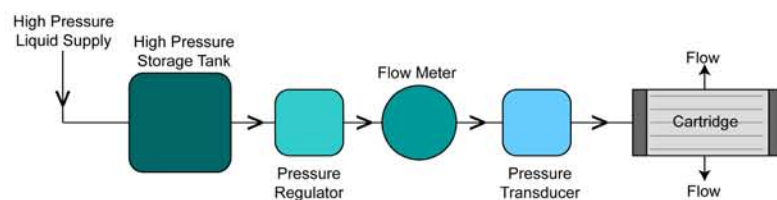
PRINCIPLE

The pores of the cartridge are filled with a wetting liquid. Gas pressure needed to permit flow through the wet cartridge is measured as the bubble point pressure, p . The bubble point pore diameter, D , is computed using the following relation:

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

where γ is surface tension and θ is the contact angle of the liquid. The flow rate of liquid through the cartridge is measured with increasing differential pressure. Liquid permeability is computed using Darcy's Law and the measured flow rate.

For bubble point testing air flow rate and pressure for each chamber are accurately controlled. For liquid permeability measurement, separate liquid supply system is provided to each liquid permeability chamber so as to provide enough liquid for liquid permeability.



UNIQUE FEATURES OF THE INSTRUMENT

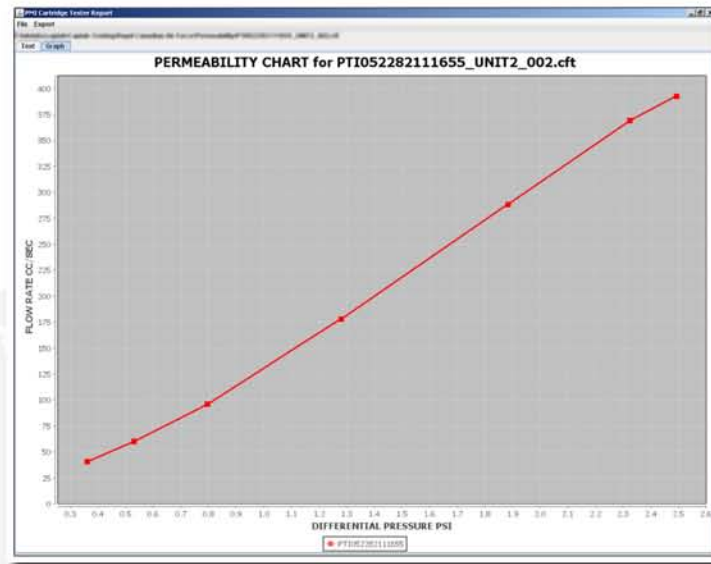
The cartridge is clamped between movable heads in each chamber so that cartridges of variable length and diameter can be accommodated. The gas and liquid are fed into the center of the cartridge through the clamping head. The level of the liquid in the sample chamber is sufficient to completely cover the cartridge. A drain is provided for removal of the liquid from the sample chamber. The instrument has two sample chambers for bubble point and two for liquid permeability. Many attachments are available for testing of cartridges of various sizes.



A variety of cartridges and adapters

TYPICAL RESULTS

Liquid flow rate measured through a cartridge as a function of differential pressure is shown in the figure below. The liquid permeability is computed from the liquid flow rate using Darcy's law.



SPECIFICATIONS

Pressure Range: 0 - 5 psi

Sample Chambers: Customized available

Liquid Flow Rate: 99 L/min Max

Power Requirements: 110/220 VAC, 50/60 Hz

Pressurizing Fluid: Clean, dry, compressed gas or nonflammable, noncorrosive liquid

OTHER PRODUCTS

- Advanced Capillary Flow Porometer
- Average Fiber Diameter Analyzer
- Capillary Condensation Flow Porometer
- Complete Filter Cartridge Analyzer
- Clamp-On Porometer
- Compression Porometer
- Cyclic Compression Porometer
- Envelope Surface Area Analyzer
- Filtration Media Analyzer
- Gas Permeation Analyzer
- High Flow Porometer
- Integrity Analyzer
- In-Plane Porometer
- Multipoint Simultaneous
- Pore Structure Analyzer
- Micro flow Porometer
- Multi-Chamber and Multi-Mode Porometer
- Nanopore Flow Porometer
- QC Porometer
- Diffusion Permeameter
- Gas Permeameter
- Gas Diffusion Analyzer
- Liquid Permeameter
- Vapor Permeameter
- Water Vapor Transmission Analyzer
- Liquid Extrusion Porosimeter
- Mercury/NonMercury Intrusion Porosimeter
- Water Intrusion Porosimeter (Aquapore)
- BET Liquisorb
- BET Sorptometer
- Gas Pycnometer
- Mercury Pycnometer

Also Available:

- Testing Services
- Consulting Services
- Short Courses

POROUS MATERIALS, INC.

20 Dutch Mill Rd
Ithaca, NY 14850 USA

US & Canada: 1-800-TALK-PMI
Phone: 607-257-5544 • Fax: 607-257-5639

info@pmiapp.com • www.pmiapp.com