

BUBBLE POINT Tester

Applications

PMI's Automated Bubble Point Tester (ABPT) provides reliable and accurate bubble point testing. Reproducibility of the test results is made possible by the fully automated, computer-controlled testing procedure and report generation. The ABPT is used to test for the largest through pore of materials such as filter media, filter cartridges, nonwovens, compact powders, membranes, separators, and other porous materials. The ABPT is controlled by Windows software so that data acquisition and system status display can be run with simple mouse movements.



Principle

The sample of the material to be tested is soaked in a liquid that spontaneously fills the pores in the sample. Gas under pressure is applied on one side of the sample. Initially, gas does not flow through the sample because the pores in the sample are filled with the liquid. However, when the gas pressure is increased, the gas empties the largest pores of liquid at a certain level of pressure and gas begins to flow through the sample. The pressure at which the gas starts to flow through the sample is known as the bubble point pressure. Bubble point pore diameter is related to the bubble point pressure and surfacetension of the liquid by the following relation.

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

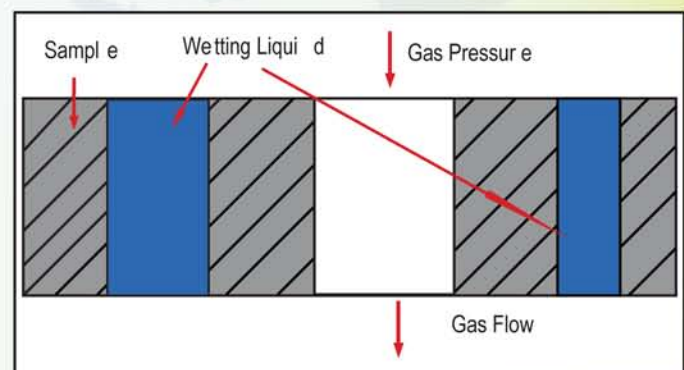
D = pore diameter

γ = surface tension of liquid

p = pressure difference across the sample

θ = Constant angle

Special Techniques are used to detect bubble point pressure accurately.



Features

- Fast and accurate determination of largest pore size
- Use of almost any fluid
- Determines largest pore size within the range of 0.013-500 microns
- Provides consistent, objective and reproducible results
- Fully automated control reduces operation time
- Transfers data to commonly used spreadsheet programs
- Deluxe model performs integrity testing (diffusional flow)

Specifications

Pore Size Range:

0.013-500, .03-500,
0.06-500 Microns

Sample Size:

0.5" - 2.5" diameter.
Others available

Pressure Range:

0-500, 0-200, 0-100, psi

Pressurizing Gas:

Clean, dry, compressed, non-corrosive air or gas

Pressure Transducer Range:

0-500, 200, 100, 25, 5 PSI

Accuracy:

0.15%

Mass Flow Transducer Range:

30 cc/minute. Others available

Resolution:

1/60,00 of full scale (1 part in 60,000)

Power Requirements:

110/120 VAC, 50/60 Hz
Others Available

Dimensions:

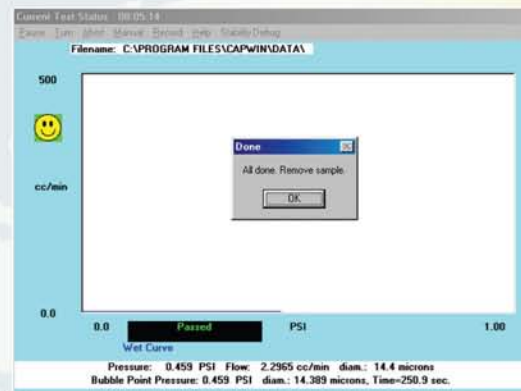
10.5" H x 20.5" W x 20.5" D

Weight:

40 lbs

Optional Features

- Multi-head models may contain 10 or more sample chambers for high volume testing.
- Go-No Go or Pass-Fail screening of samples.
- Clamp-On Sample chamber. No need for cutting samples or damaging the product.
- Test under compression, under elevated temperatures.
- Tests spaced evenly.
- Use of several wetting liquids.



Other Products

Average Fiber Diameter Analyzer
Capillary Flow Porometer
Complete Filter Cartridge Analyzer
Clamp-On Porometer
Compression Porometer
Cyclic Compression Porometer
Envelope Surface Area Analyzer
Filtration Media Analyzer
High Flow Porometer
Integrity Analyzer
Integrity Analyzer
In-Plane Porometer

Multipoint Simultaneous Pore Structure Analyzer
Microflow Porometer
Multi-Chamber and Multi-Mode 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

Water Intrusion Porosimeter (Aquapore)
BET Liquisorb
BET Sorptometer
Gas Pycnometer
Mercury Pycnometer

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Testing Services
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