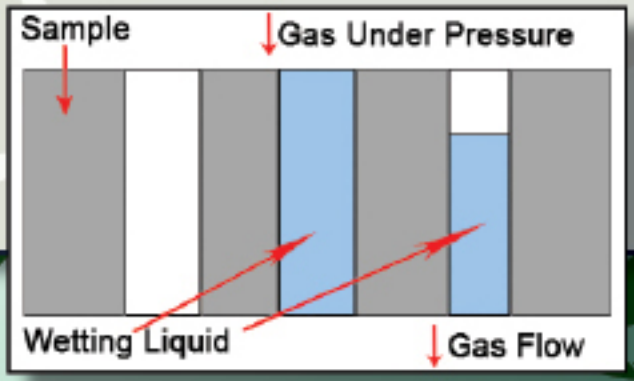
Cyclic Compression Porometer

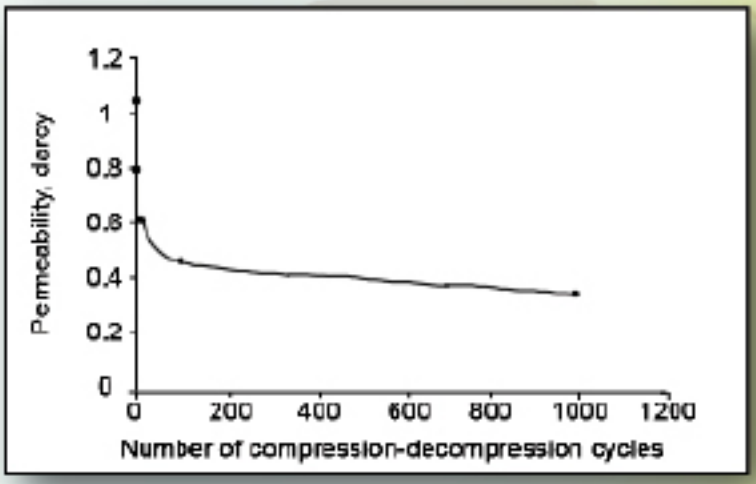
Principles of Operation

The instrument applies cyclic stress on a sample and measures the pore structure characteristics after a desired number of cycles. The sample is loaded in the sample chamber and is subjected to stress cycles in the specified stress limits. At the end of the desired number of stress cycles, the pressure of a nonreacting gas on one side of the sample is increased to initiate gas flow through pores. The gas pressure and flow rates are measured. The pores in the sample are spontaneously filled by a wetting liquid. The gas pressure and flow rates are measured through the wet sample. After acquisition of data, the sample is re-wetted and again subjected to cyclic compression. Pressure and flow rates are measured after the desired number of cycles. The test is continued to acquire data as a function of number of stress cycle.



Features

- Fully Automated
- After desired number of stress cycles
  - automatically interrupts analysis
  - performs tests
  - acquires data
  - continues to cyclically stress the sample
- Very little operator involvement
- Operator adjustable
  - stress limits in a cycle
  - number of cycles after which data is to be acquired
  - stress free duration for data acquisition
  - total number of cycles
- Concurrent measurement of compressive strain in the sample as a function of stress cycle
- Windows based simple operation



Specifications

Pore Size Range:
0.013 - 500 microns

Permeability Range:
1 x 10^{-3} - 50 darcies

Sample Size:
1.75" - 2.5" diameter

Pressure Range:
0 - 500 psi

Pressurizing Gas:
Clean, dry, and compressed air or nonflammable and noncorrosive gas

Pressure Transducer Range:
0 - 500 psi

Resolution:
1 in 20,000

Accuracy:
0.15% of reading

Mass Flow Transducer Range:
10 cm^3/min - 500,000 cm^3/min

Power Requirements:
110/120 VAC, 50/60 Hz
(Others Available)

Dimensions:
30" H x 19" W x 18.5" D

Weight:
100lbs

Effects of Cyclic Compression on Pore Diameter of Felts

Material	Maximum Compressive Stress, psi	# of Cycles	% Change in Bubble Point	% Change in Mean Flow Pore Diameter
Felt #1	500	15	-71.1	-30.3
Felt #2	750	2000	-68.4	-15.8

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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