Porous Material Inc. (USA)

Liquid Extrusion Porosimeter

Description：

The PMI Liquid Extrusion Porosimeter is a unique instrument with the ability to measure liquid permeability, pore volume and pore distribution without using mercury.

Principles of operation：

The pores of the sample are filled with a wetting liquid and loaded in the sample chamber with a membrane under the sample. The membrane is such that its largest pore is smaller than the smallest pore one wishes to measure in the sample. The pressure of a non-reacting gas is increased on the sample to extrude the liquid from pores.

The differential pressure, **p** required to displace liquid from a pore is related its diameter, **D**, surface tension of the liquid, γ and contact angle of the liquid θ.

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

The displaced liquid passes through the membrane and its volume is measured, while the

membrane prevents the gas from passing through because of insufficient pressure. The gas pressure gives the pore diameter. The volume of displaced liquid gives the pore volume. Measurement of liquid flow rate without the membrane under the sample yields liquid permeability through the sample.

Applications / Features：

The Liquid Extrusion Porosimeter is employed for the characterization of porous materials used in many industries, such as biotech, pharmaceutical, filtration, food and environmental, without fear of harmful effects on employees or the environment.

Specifications：

Pressure Range	**0 - 200 PSI (Others Available)**
Resolution	**1 in 20,000**
Intrusion Volume Range	**0 - 50cc (Others Available)**
Intrusion Volume Resolution	**0.01cc**
Sample Size	**1.5" Diameter, 1" thick (Others Available)**
Pore Size	**1000μm - 0.035μm**

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