PMI LIQUID EXTRUSION POROSIMETER

LEP-1100AX

PMI

Not just products...solutions.

Description

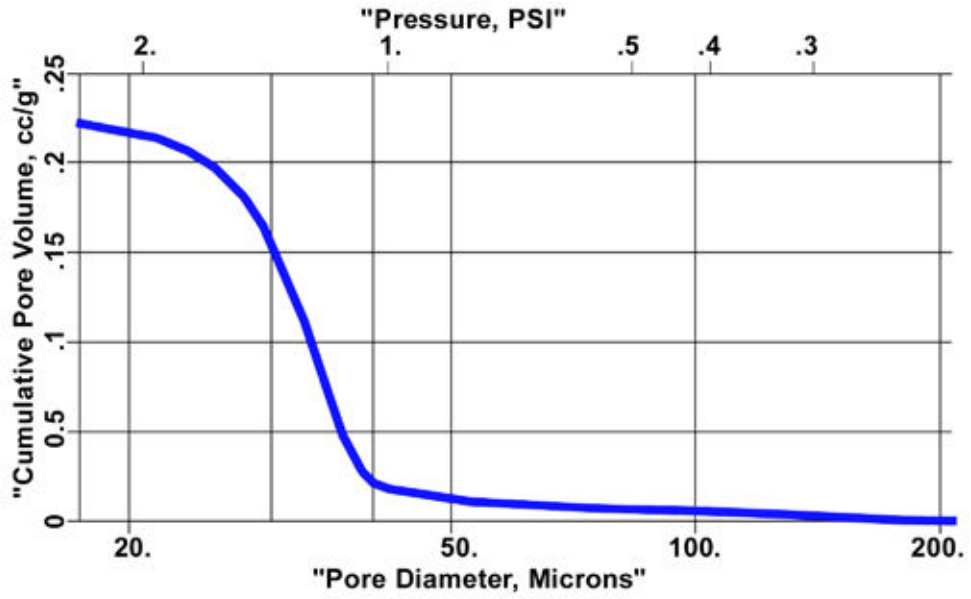
The PMI Liquid Extrusion Porosimeter is a unique instrument with the ability to measure through–pore volume, volume distribution and liquid permeability without using mercury. The instrument is employed for characterization of porous materials used in many industries suchas biotech, pharmaceutical, filtration, food, and environment. It produces no harmful effects on personnel or environment.

Principle

The sample is placed on a membrane in the sample chamber. The membrane is such that its largest pore is smaller than the smallest pore to be tested. The pores of the sample and the membrane are filled with a weting liquid. The pressure of a nonreacting gas is increased on the sample to extrude the liquid from the pores. The differential pressure, p, required to displace liquid from a pore is related to its diameter, D, surface tension of the liquid, γ, and contact angle of the liquid, θ.

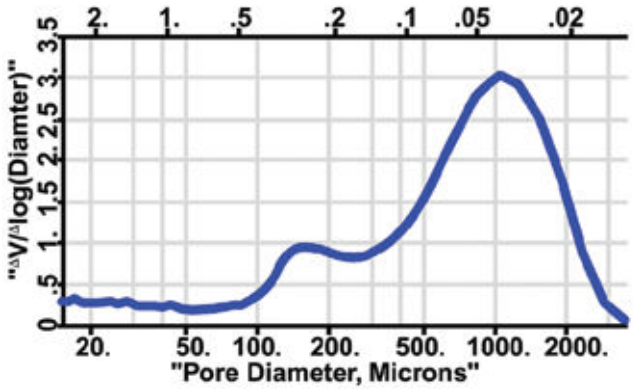
$$p = 4 \gamma \cos \theta / D$$

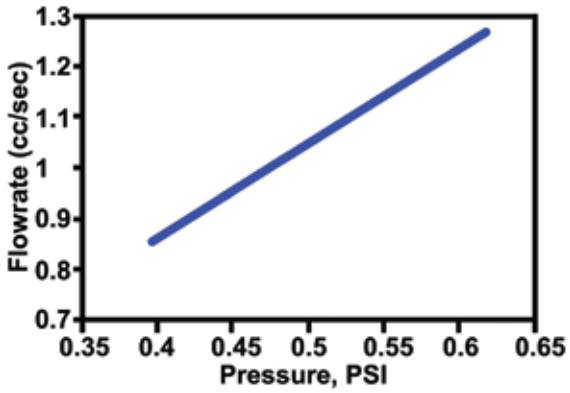
The displaced liquid passes through the liquid–filled pores of the membrane and its volume is measured, while the liquid-filled pores of the membrane prevent the gas from passing through because of insufficient pressure. The gas pressure gives the pore diameter. The volume of displaced liquid gives the pore volume. Measurement of liquid flow rate without the membrane under the sample yields liquid permeability of the sample.



Hardware Features

- No toxic material like mercury is used.
- No health hazard and no disposal-related cost.
- Fully automated. Simple to use.
- Very little operator involvement.
- Highly reproducible & accurate.
- A wide variety of samples can be investigated.
- Pressure required almost an order of magnitude less than needed for mercury intrusion.
- Can be used for pressure sensitive materials.
- Only instrument capable of measuring through-pore volume.
- Capable of measuring very large pores (up to 1000 microns).
- Options includes measuring effects of application environment (stress, temperature, chemical environment) and liquid permeability.



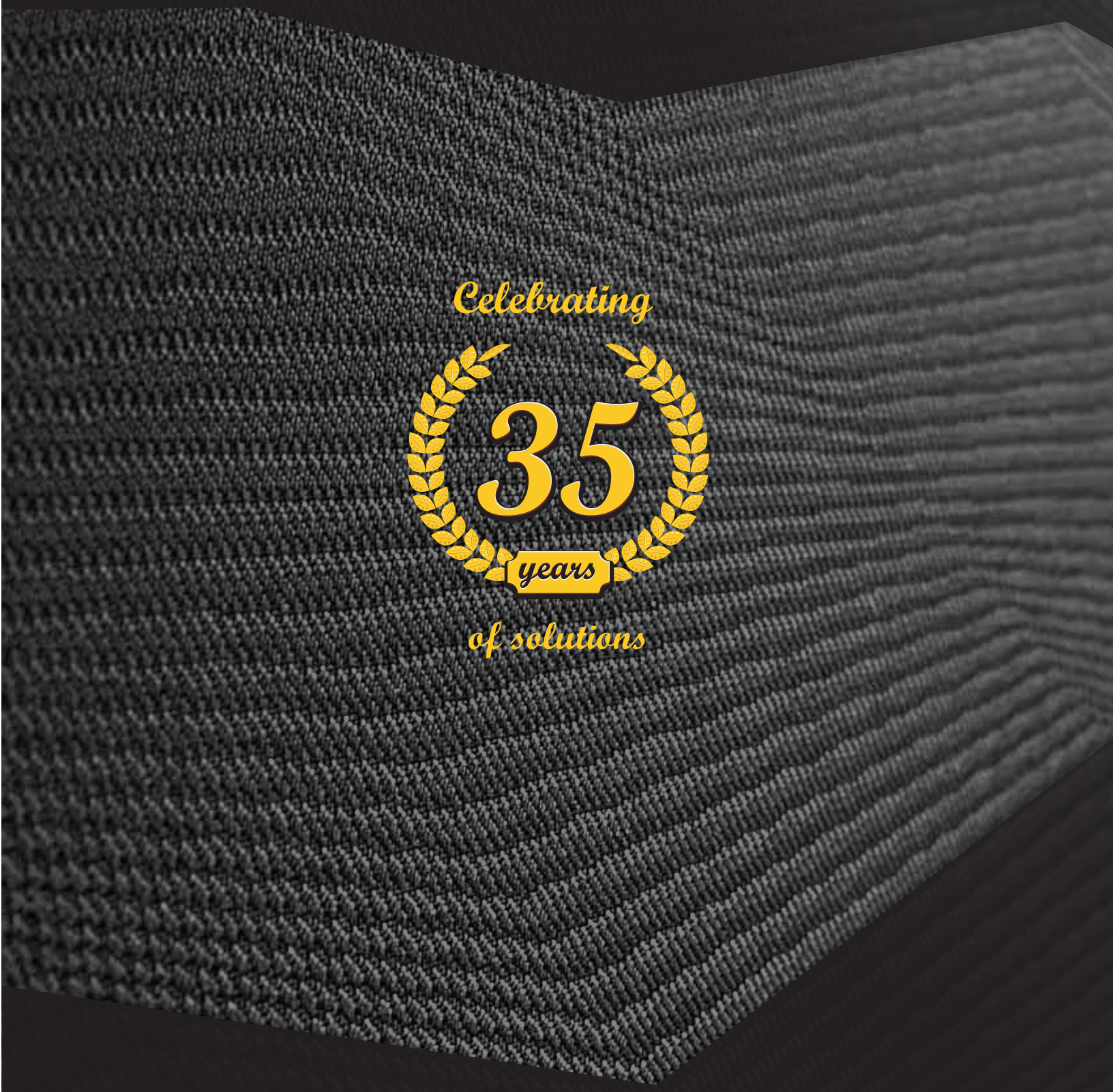


Specifications*

- Pressure Range: 0 - 100 psi (Others Available)
- Pore Size Range: 1000 µm - 1 µm
- Resolution: 1 in 20,000
- Intrusion Volume Range: 0.01cc - 10 cc

Other specifications for this machine are available. Specifications are subject to change without notice.

The most advanced, accurate, easy to use and reproducable porometers in the world.



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