

## Permeability Measurement

Determination of absolute permeability of a core by flowing air Steady State Method

Permeability is the ability of a rock or porous medium to allow fluids to pass through it. It is totally dependent to the geometry of the rock and pore network. Darcy's law, as the main equation will be used in permeability measurements. It is the relationship of the velocity (i.e. flux) of a fluid with a known viscosity to the pressure gradient by a proportionality factor called absolute permeability, expressed in Darcies.

### Experiment Description

In this experiment nitrogen flows through the Sample from a cylinder. Pressure drop during the test is measured. Permeability of the sample will be estimated using Darcy's equation for compressible fluids.



Specification	SGP -BR01	SGP -PR01	SGP -PS01
Permeability Range	1-500 md	0.01-10,000 md	0.001-10,000 md
Core Diameter	1.5"	1.5"	1.5" & 2 5/8" & 4"
Core Length	Up to 4"	Up to 4"	Up to 4" & Up to 10"
Gas Flow	0-200 Scc/min	0-10 & 0-2000 Scc/min	0-0.5 & 0-5 & 0-100 & 0-2000 Scc/min
Flow Accuracy	1% F.S.	0.2% F.S.	0.1% F.S.
Pressure Reading Accuracy	0.5% F.S.	0.1% F.S.	0.05% F.S.
Working Flow Pressure: Up to 145 psi	✓	✓	✓
Working Temperature: Ambient	✓	✓	✓
Input Power Supply: 220 VAC, 50 or 60 Hz	✓	✓	✓
Mass Flow Controller	✓	✓	✓
Computer System	✗	✓	✓
User Friendly Automated Data Acquisition, Calculating and Reporting Software	✗	✓	✓
Electronic or Pneumatic Control Valves	✗	✗	✓
Fast Measurement System	✗	✗	✓
Finger protection safety system	✗	✗	✓

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