

Unsteady State Relative Permeameter

Determination of water-oil relative permeability of a plug using Unsteady State Method

Relative permeability is the ratio of the effective permeability of a fluid to the absolute permeability of the rock that is an indication of motion ability of the fluid in the presence of another fluid in a porous medium. It is totally affiliated to saturation level.

Experiment Description

Water (or oil) is injected at a suitable pressure (or flow rate) to the plug, which is saturated with oil (or water). By measuring the necessary parameters, water-oil relative permeability curves can be obtained for imbibition or drainage utilizing analytical (JBN, JR & etc.) or numerical (history matching) methods.



Specification	URP-BR01	URP-PR01	URP-PS01
Pressure Accuracy	0.5% F.S.	0.1% F.S.	0.05% F.S.
Core Length	2" to 4"	2" to 4"	2" to 6"
Working Temperature	Ambient	Ambient	150°C ±0.1°C
Separator Volume Accuracy	0.5 ml	0.05 ml	0.01 ml
Pore Pressure: up to 6,000 Psi	✓	✓	✓
Confining Pressure: up to 6,300 Psi	✓	✓	✓
Core Diameter: 1.5"	✓	✓	✓
Pressure Taps: Inlet and Outlet of Core Holder	✓	✓	✓
Stainless Steel Material	✓	✓	✓
Input Power Supply: 220 VAC, 50Hz	✓	✓	✓
Downstream Pressure Controller	✓	✓	✓
Hand Pump	✓	✓	✓
Computer Controlled System	✗	✓	✓
User Friendly Automated Data Acquisition, Calculating and Reporting Software	✗	✓	✓
Fast Measurement System	✗	✗	✓

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