Transmissibility

Ability of reservoir to translate fluid volumes throughout the pore volume:

(1) $$\sigma = \left\langle \frac{k}{\mu} \right\rangle h$$

where

$\left\langle \frac{k}{\mu} \right\rangle$	multiphase fluid mobility
h	effective formation thickness

Symbol	Dimension	SI units	Oil metric units	Oil field units	Additional
σ	$M^{-1}\ L^{4}\ T^{1}$	$m^3/(Pa \cdot s)$	(md·m)/cp = $9.87 \cdot 10^{-13}$ $m^3/(Pa \cdot s)$	(md·ft)/cp = 0.3048 (md·m)/cp	(md·m)/cp = $8.527 \cdot 10^{-5}$ cmd/kPa = $8.64 \cdot 10^{-3}$ cmd/atm cmd/atm = 115.741 (md·m)/cp

For a single-phase fluid it simplifies to:

(2) $$\sigma = \frac{kh}{\mu}$$

where

k	formation permeability to a single-phase fluid
μ	fluid viscosity
h	effective formation thickness

See also

Physics / Fluid Dynamics / Percolation

Petroleum Industry / Upstream / Subsurface E&P Disciplines / Reservoir Flow Simulation

[Field Study & Modelling] [Complex reservoir properties]