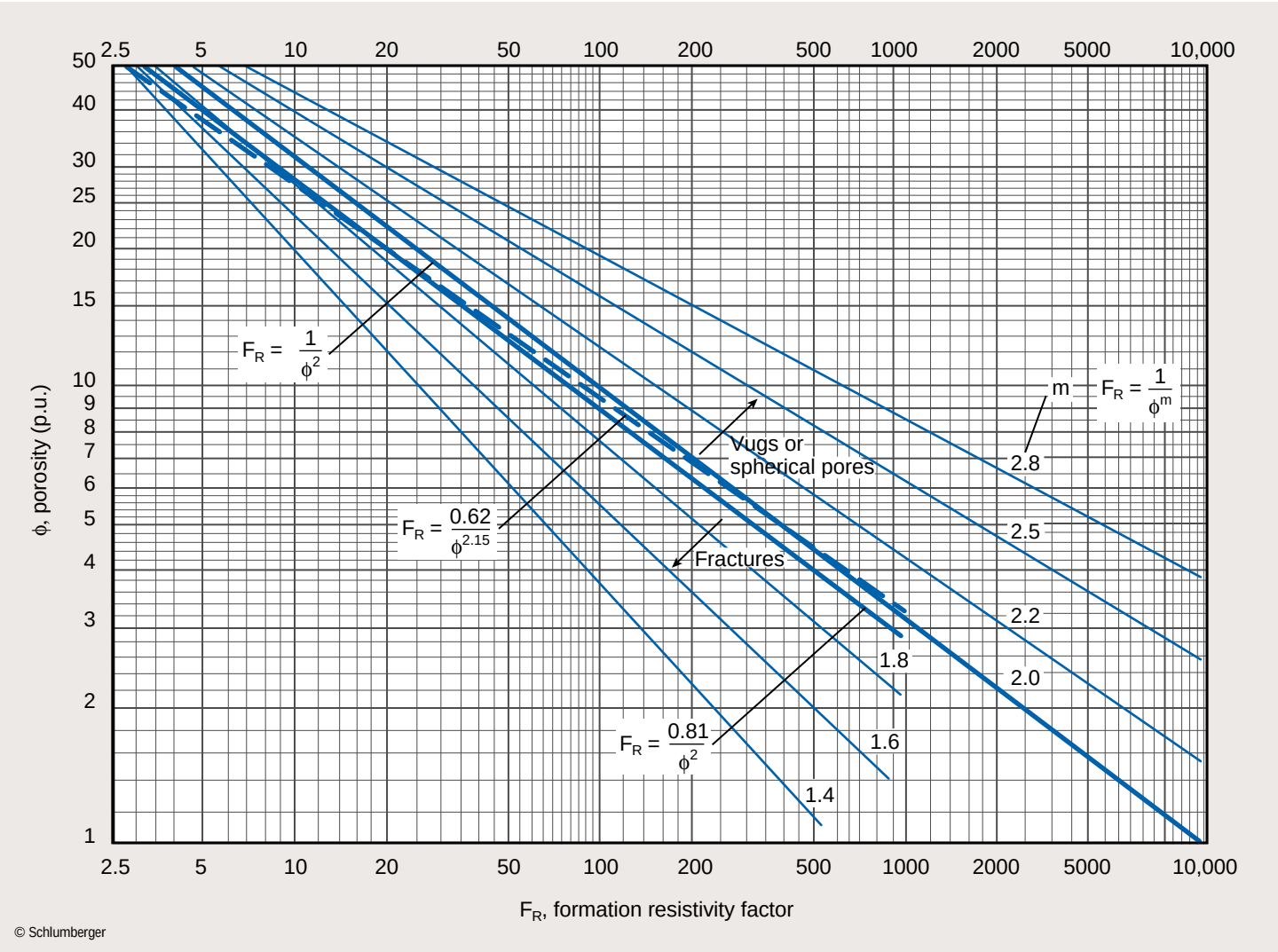
Schlumberger

Formation Resistivity Factor Versus Porosity



This chart gives a variety of formation resistivity factor-to-porosity conversions. The proper choice is best determined by laboratory measurement or experience in the area. In the absence of this knowledge, recommended relationships are the following:

For soft formations (Humble formula):

$$F_R = \frac{0.62}{\phi^{2.15}}, \text{ or } F_R = \frac{0.81}{\phi^2}$$

For hard formations:

$$F_R = \frac{1}{\phi^m},$$

with appropriate cementation factor, m.

Example: ϕ = 6% in a carbonate in which a cementation factor, m, of 2 is appropriate

Therefore, from chart,

F_R = 280