

w water viscosity Likhachev correlation @model

$$(1) \quad \mu_w(T, p) = \mu_0 \cdot \exp \left[(a + a_1 T) p + (a_2 - a_3 T) p^2 + \frac{E - (b + b_1 T) p}{R (T - \theta - (c + c_1 T) p)} \right]$$

μ_w	Dynamic viscosity, cp	a	$2.547 \cdot 10^4 \text{ bar}^{-1}$
T	Temperature , K = 273 K ÷ 463 K	a_1	$6.42 \cdot 10^7 \text{ K}^1 \cdot \text{bar}^{-1}$
p	Pressure, bar = 1 bar ÷ 800 bar	a_2	$7.967 \cdot 10^8 \text{ bar}^{-2}$
R	Gas constant = $8.31446 \cdot 10^3 \text{ kJ mol}^{-1} \text{ K}^{-1}$	a_3	$1.16 \cdot 10^{10} \text{ K}^1 \cdot \text{bar}^{-2}$
μ_0	$2.4055 \cdot 10^2 \text{ cp}$	b	$2.795 \cdot 10^4 \text{ kJ} \cdot \text{mol}^{-1} \cdot \text{bar}^{-1}$
E	$4.753 \text{ kJ} \cdot \text{mol}^{-1}$	b_1	$2.48 \cdot 10^6 \text{ kJ} \cdot \text{mol}^{-1} \cdot \text{K}^{-1} \cdot \text{bar}^{-1}$
θ	139.7 K	c	$4.85 \cdot 10^3 \text{ K} \cdot \text{bar}^{-1}$
		c_1	$6.32 \cdot 10^5 \text{ bar}^{-1}$

See Also

[Petroleum Industry](#) / [Upstream](#) / [Petroleum Engineering](#) / [Subsurface E&P Disciplines](#) / [Reservoir Engineering \(RE\)](#) / [PVT correlations](#) / [PVT Water correlations](#) / [Water viscosity correlations](#)

References

- - 2003, 73, . 4