

# Marhoun (1980) oil correlations @model

Oil correlations based on Middle Eastern oil samples.

Bubble point pressure	p <sub>b</sub>	psia		$p_b = c_1 R_s^{c_2} \gamma_g^{c_3} \gamma_o^{c_4} T^{c_5}$ $c_1 = 5.38088 \cdot 10^{-3}, c_2 = 0.715082, c_3 = -1.877840, c_4 = 3.1437, c_5 = 1.32657$
Saturated gas solubility	R <sub>s</sub>	scf/stb	p <sub>b</sub>	$R_s(p, T) = [c_1^{-1} p \gamma_g^{-c_3} \gamma_o^{-c_4} T^{-c_5}]^{1/c_2}$ $c_1 = 5.38088 \cdot 10^{-3}, c_2 = 0.715082, c_3 = -1.877840, c_4 = 3.1437, c_5 = 1.32657$
Saturated oil formation volume factor	B <sub>o</sub>	bbl/stb	p <sub>b</sub>	$B_o(p, T) = c_1 + c_2 T + c_3 F + c_4 F^2, F = R_s^{c_5}(p, T) \gamma_g^{c_6} \gamma_o^{c_7}$ $c_1 = 0.497069, c_2 = 0.862963 \cdot 10^{-3}, c_3 = 0.182594 \cdot 10^{-2}, c_4 = 0.318099 \cdot 10^{-5}$ $c_5 = 0.742390, c_6 = 0.323294, c_7 = -1.202040$

where

Location		Middle East
<i>p</i>	psia	Fluid pressure
<i>T</i>	°F	Initial formation temperature
$\gamma_{API}$	°API	Oil API gravity
$\gamma_o$	frac	Oil specific gravity
$\gamma_g$	frac	Gas specific gravity
$R_{sb}$	scf/stb	Maximum Gas Solubility

## See Also

Petroleum Industry / Upstream / Petroleum Engineering / Subsurface E&P Disciplines / Reservoir Engineering (RE) / PVT correlations / Oil correlations

## References

Al-Marhoun, Muhammad Ali. "PVT Correlations for Middle East Crude Oils." J Pet Technol 40 (1988): 650–666. doi: <https://doi.org/10.2118/13718-PA>

