Pseudo-Critical Point Correlations @model

T_{pc}	°R	pseudo-critical temperature of the fluid mixture
p_{pc}	psi	pseudo-critical pressure of the fluid mixture
γ_g	Dimensionless	Gas specific gravity (air = 1)

(1) $p_{pc} = 756.8 - 131.07\,\gamma_g - 3.6\,\gamma_g^2$ (2) $T_{pc} = 169.2 + 349.5\,\gamma_g - 74\,\gamma_g^2$	Sutton, 1985	$0.57 < \gamma_g < 1.68$ H_2S = 0% N_2 < 1% CO_2 < 1%	High molecular weight gases, rich in heptanes
(3) $p_{pc} = 709.604 - 58.718\,\gamma_g$ (4) $T_{pc} = 170.491 + 307.344\,\gamma_g$	Guo and Ghalambor (2005)	H_2S < 3% N_2 < 5% Total inorganic compounds < 7%	
(5) $p_{pc} = 667 - 15.0\,\gamma_g - 37.5\,\gamma_g^2$ (6) $T_{pc} = 168 + 325\,\gamma_g - 12.5\,\gamma_g^2$	Standing, 1977	Total inorganic compounds = 0%	Low molecular weight California natural gases
(7) $p_{pc} = 706 - 51.7\,\gamma_g - 11.1\,\gamma_g^2$ (8) $T_{pc} = 187 + 330\,\gamma_g - 71.5\,\gamma_g^2$	Standing, 1977	Total inorganic compounds = 0%	Low molecular weight California gas condensate
(9) $p_{pc} = 787.06 - 147.34\,\gamma_g - 7.916\,\gamma_g^2$ (10) $T_{pc} = 149.18 + 358.14\,\gamma_g - 66.976\,\gamma_g^2$	Elsharkawy et al. (2000)		Retrograde gases and condensates
(11) $p_{pc} = 678 - 50\,(\gamma_g - 0.5) - 206.7\,y_{N_2} + 440\,y_{CO_2} + 606.7\,y_{H_2S}$ (12) $T_{pc} = 326 + 315.7\,(\gamma_g - 0.5) - 240\,y_{N_2} - 83.3\,y_{CO_2} + 133.3\,y_{H_2S}$	Ahmed (1989)		

See also

Natural Science / Physics / Thermodynamics / Thermodynamic system / Pseudo-Critical Point (T_{pc}, p_{pc})

[Fluid Mixture]

[Pseudo-Critical Point (T_{pc}, p_{pc})][Pseudo-Critical Temperature (T_{pc})][Pseudo-Critical Pressure (P_{pc})]

[Critical Point (T_c, p_c)][ritical Temperature T_c][Critical Pressure (p_c)]

Reference

1. Sutton, R.P. 1985. Compressibility Factors for High-Molecular-Weight Reservoir Gases. Presented at the SPE Annual Technical Conference and Exhibition, Las Vegas, Nevada, USA, 22-26 September. SPE-14265-MS. http://dx.doi.org/10.2118/14265-MS
2. Standing, M. B., Volumetric and Phase Behavior of Oil Field Hydrocarbon Systems, pp. 125–126. Dallas: Society of Petroleum Engineers, 1977.