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VAPOUR PRESSURE FOR LIQUID-VAPOUR EQUILIBRIUM

Antoine's equation fitting (T in kelvin and p in kPa)

$$\ln\left(\frac{p_v}{\text{kPa}}\right) = A - \frac{B}{T + C} \quad \Leftrightarrow \quad \frac{T_v}{\text{K}} = \frac{B}{A - \ln\left(\frac{p}{\text{kPa}}\right)} - C$$

<i>Substance</i>	<i>Formula</i>	<i>A</i>	<i>B</i>	<i>C</i>
Acetylene	C ₂ H ₂	14.83	1837	-8.45
Acetone	C ₃ H ₆ O	14.71	2976	-34.52
Ammonia	NH ₃	15.49	2363	-22.62
Argon	Ar	13.91	833	2.36
Benzene	C ₆ H ₆	14.16	2949	-44.56
n-Butane	C ₄ H ₁₀	13.98	2292	-27.86
Carbon dioxide	CO ₂	15.38	1956	-2.11
Carbon monoxide	CO	13.87	770	1.64
Carbon tetrachloride	CCl ₄	14.62	3394	-10.22
Chloroform	CHCl ₃	14.50	2939	-37.00
Cyclohexane	C ₆ H ₁₂	13.79	2795	-49.11
n-Decane	C ₁₀ H ₂₂	13.99	3452	-78.90
n-Dodecane	C ₁₂ H ₂₆	14.06	3744	-92.83
Ethane	C ₂ H ₆	13.88	1582	-13.76
Ethanol	C ₂ H ₆ O	16.19	3424	-55.72
Ether	C ₄ H ₁₀ O	14.17	2564	-39.37
Ethyl acetate	C ₄ H ₈ O ₂	14.32	2868	-55.00
Ethylene	C ₂ H ₄	13.82	1427	-14.31
Ethylenglicol	C ₂ H ₆ O ₂	16.18	4494	-82.10
Helium (⁴ He)	He	10.56	37	2.0
n-Heptane	C ₇ H ₁₆	13.90	2933	-55.64
n-Hexadecane	C ₁₆ H ₃₄	14.20	4240	-117
n-Hexane	C ₆ H ₁₄	13.83	2714	-47.80
Hydrazine	N ₂ H ₄	15.30	3500	-59.50
Hydrogen	H ₂	12.78	232	8.08
Methane	CH ₄	13.58	968	-3.72
Methanol	CH ₄ O	16.49	3593	-35.22
Neon	Ne	13.47	265	2.83
Nitrogen	N ₂	13.45	658	-2.85
Nitrogen dioxide*	NO ₂	21.98	6615	86.88
di-Nitrogen oxide	N ₂ O	14.96	1840	-6.80
di-Nitrogen tetroxide*	N ₂ O ₄	21.98	6615	86.88
Nitrogen monoxide.	NO	14.24	1548	-23.91
n-Octane	C ₈ H ₁₈	14.24	3304	-55.23
iso-Octane (2-2-4 trimethyl pentane)	C ₈ H ₁₈	13.67	2896	-52.4

Oxygen	O ₂	13.68	780	-4.18
n-Pentane	C ₅ H ₁₂	13.98	2555	-36.25
Propane	C ₃ H ₈	13.71	1873	-25.10
iso-Propanol	C ₃ H ₈ O ₂	15.78	983	-75.70
Propylene	C ₃ H ₆	13.88	1875	-22.91
R12	CCl ₂ F ₂	13.79	1971	-28.30
R134a	CF ₃ CH ₂ F	14.41	2094	-33.06
R410A**	n.a.	14.97	2118	-17.27
Sulfur dioxide	SO ₂	14.94	2385	-32.21
Sulfur hexafluoride	SF ₆	12.53	1045	-75.64
Water	H ₂ O	16.54	3985	-39.00
Xenon	Xe	13.62	1340	-19.00

*There are mixture of dinitrogen tetroxide (N₂O₄) and nitrogen dioxide (NO₂). The NO₂/N₂O₄ equilibrium depends on temperature, NO₂ being favoured at high temperatures and N₂O₄ at low temperatures. When condensing, at 11.3 °C at 100 kPa, most of the liquid is N₂O₄ which is colourless or pale brownish,

**R410A is a near-azeotropic mixture of R32 (difluoromethane, CH₂F₂) and R125 (pentafluoroethane, CHF₂CF₃), 50/50 by weight (70/30 molar), which can be approximated as a pure substance.

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