

Table 8.

$PV = A + B\rho + C\rho^2 + D\rho^3 + E\rho^4$ for methane up to 1000 atm						
Temp. °C	A	B·10 ³	C·10 ⁶	D·10 ⁹	E·10 ¹²	Range of ρ
0	1.0024	-2.7462	11.111	-29.457	52.405	up to 500 Am.
25	1.0942	-2.3337	9.515	-23.849	48.724	up to 480 Am.
50	1.1859	-1.9532	7.968	-17.090	42.667	up to 460 Am.
75	1.2777	-1.6599	7.628	-15.009	41.557	up to 440 Am.
100	1.3694	-1.3532	6.456	7.729	32.446	up to 420 Am.

$PV = 1.0000$ at 0°C, 1 atm. ρ = Amagat density.

文 献

- 1) L. C. Nelson, E. F. Obert, *Trans. ASME.* 76, 1057 (1954).
- 2) E. H. Amagat, *Ann. chim. et phys.* (6)29, 68 (1893).
- 3) A. Michels, R. Gibson, *Ann. Physik* 87, 850 (1928).
- 4) A. Michels, C. Michels, H. Wouters, *Proc. Roy. Soc. (London)* A153, 214 (1935).
- 5) M. Benedict, *J. Am. Chem. Soc.* 59, 2224, 2233 (1937).
- 6) P. W. Bridgman, "The Physics of High Pressure" (1949) G. Bell and Sons, Ltd., London.
- 7) L. B. Smith, R. S. Taylor, *J. Am. Chem. Soc.* 47, 3122 (1925).
- 8) B. H. Sage, D. C. Webster, W. N. Lacey, *Ind. Eng. Chem.* 29, 658 (1937).
- 9) E. P. Bartlett, *J. Am. Chem. Soc.* 49, 687 (1927).
- 10) E. P. Bartlett, H. L. Cupples, T. H. Tremearne, *ibid.* 50, 1275 (1928).
- 11) E. P. Bartlett, H. C. Hetherington, H. M. Kvalnes, T. H. Tremearne, *ibid.* 52, 1363 (1930).
- 12) C. O. Bennet, B. F. Dodge, *Ind. Eng. Chem.* 44, 180 (1952).
- 13) L. Holborn, *Ann. Physik* 63, 674 (1920).
- 14) D.T.A. Townend, L. A. Bhatt, *Proc. Roy. Soc. (London)* A134, 502 (1931).
- 15) R. D. Haney, R. H. Bliss, *Ind. Eng. Chem.* 36, 985 (1944).
- 16) I. R. Krichevski, V. P. Markov, *Acta Phys. U.R.S.S.* 14, 271 (1941).
- 17) F. G. Keyes, *Proc. Am. Acad.* 68, 530 (1932-3).
- 18) R. Wiebe, V. L. Gaddy, *J. Am. Chem. Soc.* 60, 2300 (1938).
- 19) D. M. Newitt, "The Design of High Pressure Plant and Properties of Fluids at High Pressures" (1940) Oxford University Press, Oxford, England.
- 20) J. A. Beattie, D. D. Jacobus, *J. Phys. Chem.* 34, 1254 (1930).
- 21) B. J. Cherney, H. Marchman, R. York, *Ind. Eng. Chem.* 41, 2653 (1949).
- 22) A. Michels, H. Wouters, J. DeBoer, *Physica* 3, 585 (1936).
- 23) E. A. H. Love, "A Treatise on the Mathematical Theory of Elasticity" 4th ed. (1927) Cambridge University Press, Cambridge, England.
- 24) F. G. Keyes, L. B. Smith, D. B. Joubert, *J. Math. Phys.* 1, 191 (1922).
- 25) A. Michels, G. W. Nederbragt, *Physica* 3, 569 (1936).
- 26) H. M. Kvalnes, V. L. Gaddy, *J. Am. Chem. Soc.* 53, 394 (1931).
- 27) R. H. Olds, H. H. Reamer, W. N. Lacey, B. H. Sage, *Ind. Eng. Chem.* 35, 922 (1943).
- 28) 鳥海, 伊達, 岩崎, 本報告 10, 263 (1960).