

Table 6. Comparison of compressibility factors for methane.

P_{atm}	0°			25°				50°				75°			100°			
	Present work	Miche- ls et al	Gaddy et al	Present work	Miche- ls et al	Gaddy et al	Sage et al	Present work	Miche- ls et al	Gaddy et al	Sage et al	Present work	Miche- ls et al	Sage et al	Present work	Miche- ls et al	Gaddy et al	Sage et al
30	0.9305	0.9305	0.9303	1.0375	1.0375		1.0372	1.1415	1.1415	1.1412	1.1408	1.2433	1.2431	1.2427	1.3428	1.3427	1.3411	1.3428
60	0.8611	0.8612	0.8611	0.9852	0.9857	0.9871	0.9848	1.1026	1.1023	1.1020	1.1015	1.2146	1.2135	1.2130	1.3210	1.3213		1.3211
80	0.8199	0.8193	0.8199	0.9557	0.9553	0.9569	0.9544	1.0788	1.0800	1.0806	1.0799	1.1986	1.1972	1.1971	1.3087	1.3101		1.3101
100	0.7852	0.7839	0.7853	0.9312	0.9297	0.9319	0.9285	1.0600	1.0616	1.0636	1.0616	1.1850	1.1845	1.1840	1.2998	1.3017		1.3019
120	0.7621	0.7580	0.7604	0.9110	0.9102	0.9126	0.9091	1.0459	1.0477	1.0498	1.0477	1.1757	1.1753	1.1750	1.2945	1.2963		1.2964
140	0.7467	0.7434	0.7457	0.8970	0.8977	0.9003	0.8983	1.0372	1.0388	1.0408	1.0386	1.1700	1.1699	1.1699	1.2930	1.2939		1.2941
160	0.7421	0.7401	0.7425	0.8919	0.8925	0.8949	0.8944	1.0330	1.0350	1.0367	1.0347	1.1680	1.1686	1.1688	1.2942	1.2946		1.2944
180	0.7487		0.7482	0.8944	0.8944	0.8970	0.8955	1.0349	1.0363	1.0373	1.0359	1.1703	1.1709	1.1714	1.2978	1.2984	1.2995	1.2980
200	0.7632		0.7631	0.9016	0.9025	0.9048	0.9018	1.0428	1.0425	1.0437	1.0419	1.1754	1.1768	1.1768	1.3040	1.3051	1.3076	1.3045
300	0.8892		0.8886	1.0049		1.0062	1.0032	1.1267		1.1286	1.1266	1.2499		1.2519	1.3760		1.3785	1.3768
400	1.0468		1.0468	1.1508		1.1499	1.1502	1.2583		1.2608	1.2612	1.3738		1.3766	1.4910		1.4929	1.4926
500	1.2106		1.2086	1.3041		1.3064	1.3102	1.4105		1.4106	1.4134	1.5148		1.5200	1.6262		1.6277	1.6282
600	1.3763		1.3709	1.4642		1.4659	1.4720	1.5650		1.5653	1.5675	1.6650		1.6714	1.7725		1.7729	1.7750
800	1.6921		1.6894	1.7812		1.7801		1.8781		1.8781		1.9770			2.0757		2.0744	
1000	1.9968		2.0000	2.0916		2.0892		2.1880		2.1845		2.2784			2.3798		2.3757	

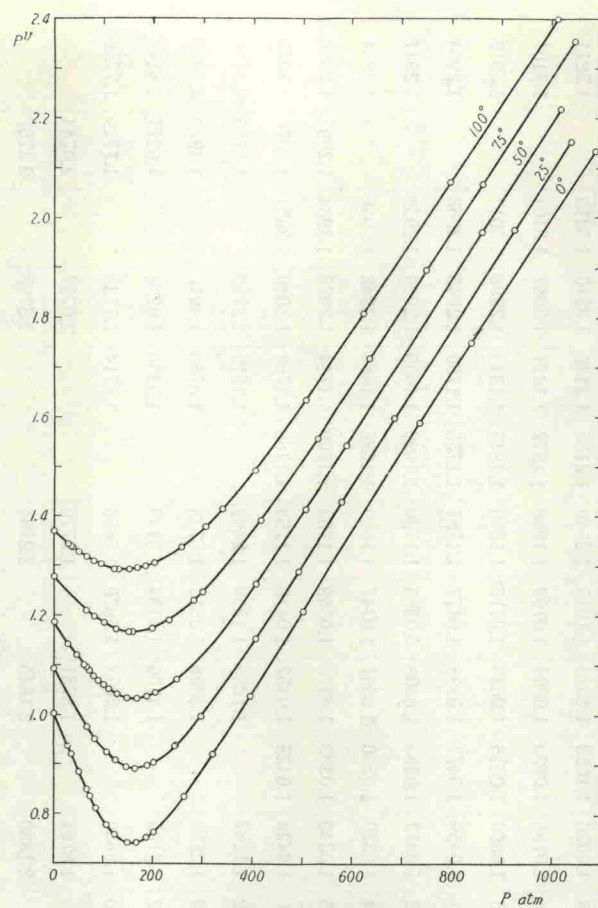


Fig. 6. Compressibility isotherms of methane.

図については ρ の四次の項までとり、Table 8 に示すように係数を得た。これによる計算値は 0°C , 100 Amagat 以下の範囲で最大 0.7% の偏差となるほかはすべて 0.2% 以内の偏差で実測値を再現する。

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Table 7.

$PV=A+B\rho+C\rho^2$ for methane up to 200 atm				
Temp. $^\circ\text{C}$	A	$B \cdot 10^3$	$C \cdot 10^6$	Range of ρ
0	1.0024	-2.3941	5.509	up to 200 Am.
25	1.0942	-2.1240	5.545	up to 200 Am.
50	1.1859	-1.8365	5.419	up to 150 Am.
75	1.2777	-1.5509	5.470	up to 150 Am.
100	1.3694	-1.2922	5.127	up to 120 Am.

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