4.0

16.84
23.86
28.36
33.34
...
...
...
11.29
15.85
19.62
25.12
...
...
5.29
6.32
8.63
13.71
16.82
19.85
20.85
22.60
...

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=2.165.

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TABLE II. Parameters for the density equation[a] for 6-methyl-3-heptanol. $\rho(P, t) = \rho(P, 0) - A(P)t$.

	P (kbar)								
	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0
$\rho(P, 0)$	0.8345	0.8630	0.8827	0.8997	0.9136	0.9256	0.9366	0.9441	0.9518
$10^4A(P)$	7.20	6.06	5.32	4.90	4.52	4.22	4.06	3.62	3.38

[a] P is the pressure in kilobars; t is in degrees Centigrade.

our lowest test temperatures, dielectric dispersion became evident as a frequency-dependent conductance from which we estimated the relaxation time on the basis of the Debye equation. Our data at 1 kbar extrapolate smoothly to those of Gilchrist, Earley, and Cole.

The isobaric density of 6-methyl-3-heptanol was found to be a linear function of temperature according to the equation

$$\rho(P, t) = \rho(P, t=0) - A(p)t. \qquad (2)$$

Pertinent values of the parameters $\rho(P, 0)$ and $A(P)$ are listed in Table II.

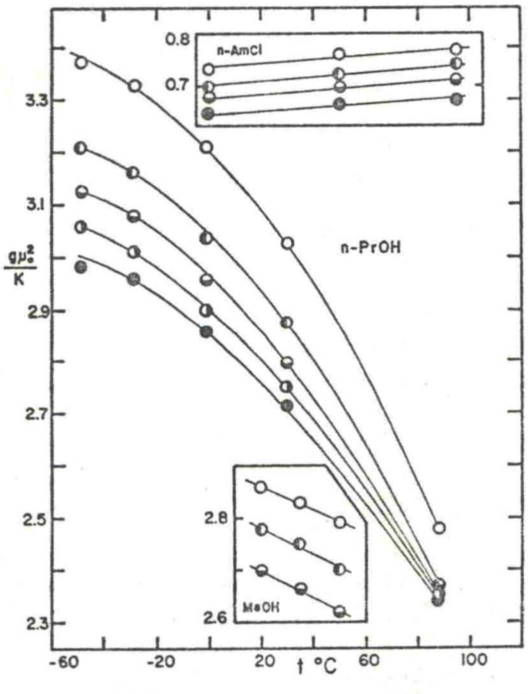

FIG. 1. $g\mu_0^2/K$ as a function of temperature at various pressures. n-propanol. $K = 1.68^3$. ○ = 1 atm; ◐ = 1 kbar; ◒ = 2 kbar; ◑ = 3 kbar; ● = 4 kbar. n-amyl chloride (top insert). Dielectric data from W. L. Lees, Ph.D. thesis, Harvard University, Cambridge, Mass., 1949; density data from P. W. Bridgman, Ref. 11. $K = 2.12^3$. ○ = 1 atm; ◐ = 1 kbar; ◒ = 2 kbar. ● = 4 kbar. Methanol (bottom insert). Dielectric data of H. Hartmann, A. Neumann, and G. Rinck, Z. Physik. Chem. (Frankfurt) 44, 204 (1965); density data from Ref. 11. $K = 1.68^3$. ○ = 1 atm; ◐ = 1 kbar; ◒ = 2 kbar.

Hexane Solutions

The dielectric constant of several dilute solutions of each solute in n-hexane was determined to 4 kbar at 30°±0.5°. In the subsequent analysis of the data the important parameter is the slope of a plot of $(\epsilon - n_D^2)$ as a function of Q. Here ϵ is the dielectric constant and n_D is the index of refraction of a solution containing Q weight-percent solute. An example of our results with diethyl ether have been reported in a preliminary Note[12]; the precision for butyl chloride and dichloroethane is similar. However, for *sec*-butanol much lower concentrations of solute were required in order to eliminate spurious effects due to solute association, a factor which presumably becomes even more important at high pressures. The maximum concentration was 0.3%[13] and the data scattered considerably. Consequently, conclusions regarding the pressure dependence of the dipole moment of *sec*-butanol are less certain than for the nonassociating solutes.

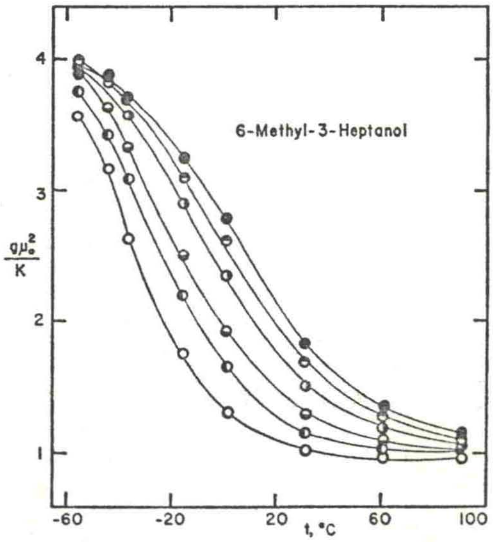

FIG. 2. $g\mu_0^2/K$ as a function of pressure at various pressures for 6-methyl-3-heptanol. $K = 1.68^3$. ○ = 1 atm; ◐ = 0.5 kbar; ◒ = 1 kbar; ◑ = 2 kbar; ◓ = 3 kbar; ● = 4 kbar.

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[12] T. Chen and W. Dannhauser, Chem. Commun. 1968, 873.
[13] D. A. Ibbitson and L. F. Moore, J. Chem. Soc. 1967, 76.