

According to this, the shift should be nearly linear in ρ^2 for a low value of P , but for high P the shift should be more nearly linear in ρ . This does not agree with our observations since all substances maintain the ρ^2 dependence within experimental error as shown in Fig. 2. Two of the main difficulties seem to be that the approximation of point dipoles for dipole-dipole

interaction breaks down drastically at the intermolecular distances involved here¹⁹ and the inclusion of the permanent dipole contribution to P ought to depend on the ability of the solvent dipoles to keep up with the librating and/or rotating alcohol molecules.

¹⁹ Hirschfelder, Curtiss, and Bird, *Molecular Theory of Gases and Liquids* (John Wiley and Sons, Inc., New York, 1954), p. 850.