

Problem 1A.4

Gas-mixture viscosities at low density. The following data² are available for the viscosities of mixtures of hydrogen and Freon-12 (dichlorodifluoromethane) at 25°C and 1 atm:

Mole fraction of H ₂ :	0.00	0.25	0.50	0.75	1.00
$\mu \times 10^6$ (poise):	124.0	128.1	131.9	135.1	88.4

Use the viscosities of the pure components to calculate the viscosities at the three intermediate compositions by means of Eqs. 1.4-15 and 16.

Sample answer: At 0.5, $\mu = 0.01317$ cp.

²J. W. Buddenberg and C. R. Wilke, *Ind. Eng. Chem.* **41**, 1345–1347 (1949).