

Study Guide for Chapter 4

- 1) What is the practical equilibrium constant in terms of pressure, concentration, mole fraction or activity?
- 2) Use the ideal gas law to derive the relationships between (practical) K_p and K_c , and between K_p and K_x .
- 3) Equation to remember: relation between the standard-state ΔG and the thermodynamic equilibrium constant
- 4) Do K_p and K_c , K_x , and K_a depend on P , V , and T ?
- 5) What is the definition of chemical potential?
- 6) What is Le Chatelier principle?
- 7) What is the direction of the shift in equilibrium upon a change in pressure and volume.
- 8) How does a reaction shift if we add A or C after the equilibrium is established? Does ΔG change? What if we remove A or C?
- 9) What does the degree of association mean for the above reaction?
- 10) Equation to remember: van't Hoff equation in two forms: derivative with respect to dT and $d(1/T)$.
- 11) What is the x axis and y axis in a van't Hoff plot? What is the slope? What is the intercept?
- 12) A way to shift the equilibrium is to couple the reaction of interest with a second one. To make an unfavorable reaction possible, what is the requirement for the second reaction?