

LECTURE 19 CHEMICAL EQUILIBRIUM

I. Nature of Chemical Equilibrium

- A. Free energy, G vs. Progress of reaction
- B. Reaction quotient
 - 1. Partial pressure (gas)
 - 2. Concentration (solute)
- C. Relationship between K and Q

II. Meaning of K

- A. Concentration of products at equilibrium
- B. $K > 1$
- C. Relationship between ΔG° and the magnitude of K

III. Relationship Between Equilibrium Expressions

IV. External Effects on K

- A. Principle of Le Châtelier
- B. Adding and removing reagents
 - 1. Adding more reactant
 - 2. Adding more product
 - 3. Removing product