

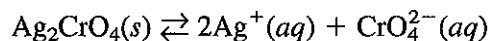
CHAPTER 18 REVIEW

Chemical Equilibrium

SECTION 18-1

SHORT ANSWER Answer the following questions in the space provided.

1. _____ Silver chromate dissolves in water according to the following equation:

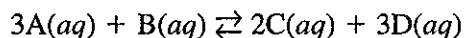


Which of these correctly represents the equilibrium expression for the above equation?

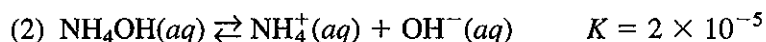
- (a) $\frac{2[\text{Ag}^+] + [\text{CrO}_4^{2-}]}{\text{Ag}_2\text{CrO}_4}$ (b) $\frac{[\text{Ag}_2\text{CrO}_4]}{[\text{Ag}^+]^2[\text{CrO}_4^{2-}]}$ (c) $\frac{[\text{Ag}^+]^2[\text{CrO}_4^{2-}]}{1}$ (d) $\frac{[\text{Ag}^+]^2[\text{CrO}_4^{2-}]}{2[\text{Ag}_2\text{CrO}_4]}$

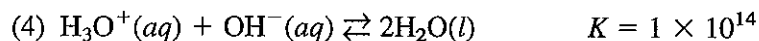
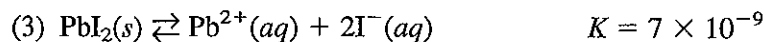
2. Are pure solids included in equilibrium expressions? Explain your answer.

3. Write the equilibrium expression for the following hypothetical equation:



4. a. Write the appropriate equilibrium expression for each of the following equations. Include the value of K .

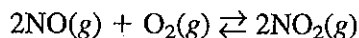


SECTION 18-1 continued

- _____ b. Which of the four systems in part a proceeds farthest to the right when equilibrium is established?
- _____ c. Which system contains mostly reactants at equilibrium?

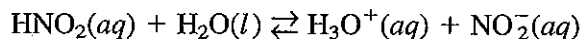
PROBLEMS Write the answer on the line to the left. Show all your work in the space provided.

5. _____ Consider the following reaction:



At equilibrium, $[\text{NO}] = 0.80 \text{ M}$, $[\text{O}_2] = 0.50 \text{ M}$, and $[\text{NO}_2] = 0.60 \text{ M}$. Calculate the value of K for this reaction.

6. Nitrous acid is a weak acid that hydrolyzes according to the following equation:



At 298 K, $K = 4.3 \times 10^{-4}$.

- _____ a. Which term in the above equation does not appear in the equilibrium expression?
- _____ b. For the above reaction, $[\text{H}_3\text{O}^{+}] = [\text{NO}_2^{-}] = 0.043 \text{ M}$ at equilibrium. Calculate $[\text{HNO}_2]$.