"TRY YOURSELF" PROBLEM FROM STUDY SECTION 7.2

Try Yourself 7.2 a

Write an equilibrium constant expression for each chemical equation.

a. $4NO_2(g) + O_2(g) + 2H_2O(g) \leftrightarrows 4HNO_3(g)$

b. $6NH_3(aq) + Ni^{2+}(aq) \leftrightarrows Ni(NH_3)_6^{2+}(aq)$

a. $2BaO_2(s) \leftrightarrows 2BaO(s) + O_2(g)$

Try Yourself 7.2 b

A 4.00 L flask is filled with 0.75 mol SO_3, 2.50 mol SO_2 and 1.30 mol O_2, and allowed to reach equilibrium according to:

$$2SO_3(g) \leftrightarrows 2SO_2(g) + O_2(g)$$

Calculate the reaction quotient Q and deduce in which direction the reaction above will proceed to reach equilibrium at the reaction conditions concerned if K_c = 12 mol/L at 25 °C.