SCH4U Nov 2016

All ICE Charts

1. $CO_{2(g)} + 4H_{2(g)} \leftarrow CH_{4(g)} + 2H_2O_{(g)}$ 0.10 mol of CO_2 and 0.20 mol of H_2 are placed in a 1 L container. At equilibrium the

concentration of H_2 is 0.10 mol/L. $K_{eq} = ?$

2. $H_2O_{(g)} + Cl_2O_{(g)} \leftrightarrow 2HOCl_{(g)} K_{eq} = 0.0050$

0.10mol/L of HOCl is allowed to react. What is the concentration of Cl2O at equilibrium?

3. $Br_{2(g)} + 5F_{2(g)} \leftrightarrow 2BrF_{5(g)} K_{eq} = 50$

0.0010 mol of bromine and 1.00 mol of fluorine are added to a 1 L container. What is the concentration of BrF_5 at equilibrium?

4. $PCl_{5(g)} \leftarrow \rightarrow PCl_{3(g)} + Cl_{2(g)}$ $K_{eq} = 12.5$

0.10 mol PCl_5 , 0.20 mol PCl_3 and 0.30 mol Cl_2 are added to a 1 L container. What is the concentration of Cl_2 at equilibrium?

5. $2HCl_{(q)} \leftrightarrow H_{2(q)} + Cl_{2(q)} \qquad K_{eq} = 1.0 \times 10^{-4}$

The starting concentration of HCl is 1.0M. What is the equilibrium concentration of H_2 ?

6. $CO_{(g)} + Cl_{2(g)} \longleftrightarrow COCl_{2(g)}$

An equilibrium mixture contains 0.10 M CO, 0.00050M Cl_2 and 0.10M $CoCl_2$. What is the new equilibrium concentration of CO after 0.050 mol of $COCl_2$ are removed from 1 L of the mixture?

7.
$$C_{(s)} + O_{2(g)} \leftarrow > CO_{2(g)} \quad K_{eq} = 10$$

Into a 500 m L container, 0.50 mol of C and 0.50 mol of O_2 are added. What is the concentration of CO_2 at equilibrium?

8.
$$A_{(aq)} + 3B_{(aq)} \leftrightarrow 2C_{(aq)}$$
 $K_{eq} = 1.0 \times 10^{-3}$

0.10 M C is added to a container. What is the concentration of A at equilibrium?