**ANSWERS: Additional questions on Equilibrium constant expression**

**Write the equilibrium constant expression for each reaction**

|  |  |
| --- | --- |
| 2NOCl(g) ⇌ 2NO(g) + Cl2(g) | [NO]2[Cl2]  [NOCl]2 |
| 5CO(g) + I2O5(g) ⇌ 5CO2(g) + I2(g) | [CO2]5[I2]  [CO]5[I2O5] |
| I2(g) + Br2(g) ⇌ IBr(g) | [IBr]  [I2][Br2] |
| 2NO(g) + 2H2(g) ⇌ N2(g) + 2H2O(g) | [H2O]2 [N2]  [NO]2[H2]2 |
| Br2(g) + Cl2(g) ⇌ 2BrCl(g) | [BrCl]2  [Br2][Cl2] |
| 2H2S(*g*) ⇌ 2H2(*g*) + 2S(s) | [H2]2[S]2  [H2S]2 |
| AgCl(s) ⇌ Ag+(aq) + Cl-(aq) | [Ag-][Cl-] |
| N2O4(g) ⇌ 2NO2(g) | [NO2]2  [N2O4] |
| fluorine and chlorine gas combine to form ClF3 (g) | [ClF3]2  [F2]3[Cl2] |
| Cu2+(aq) + 4NH3(aq) ⇌ [Cu(NH3)4]2+(aq) | [Cu(NH3)42+]  [Cu2+][NH3]4 |
| I2(g)+ 3Cl2(g)⇌ 2ICl3(g) | [ICl3]2  [I2][Cl2]3 |

Using the information provided in the table below, write the equation for each reaction

|  |  |
| --- | --- |
| Equilibrium expression | Equation |
| *K*c = [FeSCN2+]  [Fe3+][SCN-] | Fe3+(aq) + SCN–(aq) ⇌ [FeSCN]2+(aq) |
| *K*c = [PCl5]  [PCl3][Cl2] | PCl3 + Cl2 ⇌ PCl5 |
| Kc = [NO]4[H2O]6  [O2]5[NH3]4 | 4NH3(g)+ 5O2(g) ⇌ 4NO(g) + 6H2O(g) |

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