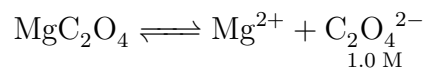
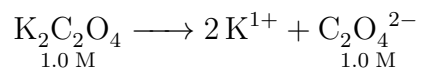


**Find Ion Concentration in a Solution of a Soluble Salt (another fixed ion problem) - Question 4**

what is the maximum possible concentration of magnesium ion in p.p.m. that can exist in a 1.0 M  $K_2C_2O_4$  solution



$$K_{sp} = 8.6 \times 10^{-5}$$

$$K_{sp} = [Mg^{2+}][C_2O_4^{2-}]$$

$$[Mg^{2+}] = \frac{K_{sp}}{[C_2O_4^{2-}]^2}$$

$$[Mg^{2+}] = \frac{8.6 \times 10^{-5}}{1.0}$$

$$[Mg^{2+}] = 8.6 \times 10^{-5}\text{ M}$$

$$\frac{8.6 \times 10^{-5}\text{ mol } Mg^{2+}\text{ L}}{1\text{ L}} \times \frac{24.31\text{ g } Mg^{2+}}{1\text{ mol } Mg^{2+}} \times \frac{1000\text{ mg}}{1\text{ g}} = \frac{2.090\text{ mg } Mg^{2+}}{1\text{ L}}$$

$$\therefore [Mg^{2+}] = 2.090\text{ p.p.m.}$$