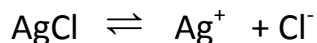


AS 90700 Describe Properties of Aqueous Systems

Sparingly soluble salts – essential equations

Example AB type salts



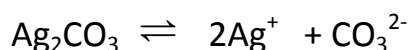
so K_s is given by $[\text{Ag}^+][\text{Cl}^-]$

ie $K_s = x^2$ where x is the solubility in mol L^{-1}

So to find the solubility in mol L^{-1} we can take the square root of K_s

$$x = \sqrt{K_s} \quad \text{and} \quad K_s = x^2$$

For A_2B or AB_2 type salts



K_s is given by $[\text{Ag}^+]^2[\text{CO}_3^{2-}]$

$K_s = 4x^3$ where x is the solubility in mol L^{-1}

$$x = \sqrt[3]{K_s/4} \quad \text{and} \quad K_s = 4x^3$$

where x is the solubility in mol L^{-1}

to convert mol L^{-1} into g L^{-1} you multiply by M (molar mass)

to convert g L^{-1} into mol L^{-1} you divide by M (molar mass)

Units

Solubility in mol L^{-1} or g L^{-1}

m (mass) is g

M (molar mass) = g mol^{-1}

n (amount in mol) = mol

(remember that $n=m/M$)

Always check that volumes are given in litres – if not then divide the volume in mL by 1000!

