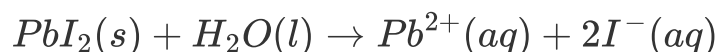


Preliminary Questions

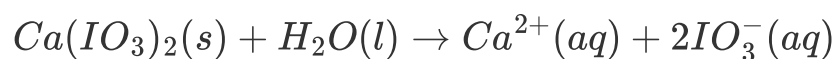
1. Write the reaction and K_{sp} expressions for following dissolving in water:

1. Lead Iodide (PbI_2)



$$K_{sp} = [Pb^{2+}][I^{-}]^2$$

2. Calcium Iodate ($Ca(IO_3)_2$)



$$K_{sp} = [Ca^{2+}][IO_3^{-}]^2$$

2. A student performed titrations in experiment. 25 mL of $Ca(OH)_2$ was titrated with 22.7 mL of 0.103 M HCl. Calculate the molar solubility and K_{sp} of $Ca(OH)_2$.

$$[OH^{-}] = \frac{22.7mL \times 0.103M}{25mL} = 0.09352M$$

$$[Ca^{2+}] = \frac{[OH^{-}]}{2} = 0.046762M$$

$$K_{sp} = [Ca^{2+}][OH^{-}]^2 = 0.0000409$$

3. A student performed titrations in experiment. 25 mL of $Ca(OH)_2$ and 0.05 M Ca^{2+} was titrated with 2.77 mL of 0.103 M HCl. Calculate molar solubility of $Ca(OH)_2$.

$$[OH^{-}] = \frac{2.77mL \times 0.103M}{25mL} = 0.0114M$$

$$[Ca^{2+}] = \frac{[OH^{-}]}{2} = 0.0057062M$$

$$K_{sp} = [Ca^{2+}][OH^{-}]^2 = 7.43 \times 10^{-7}$$