

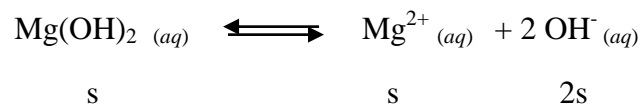
Lampiran 10

Kunci Jawaban Pretest

1. Diketahui : kelarutan $\text{Mg(OH)}_2 = 1 \times 10^{-2} \text{ mol/L}$

Ditanya : $K_{sp} \text{ Mg(OH)}_2$

Penyelesaian :



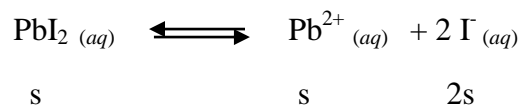
$$\begin{aligned} K_{sp} &= [\text{Mg}^{2+}] [\text{OH}^-]^2 \\ &= (s) (2s)^2 \\ &= 4s^3 \\ &= 4 (1 \times 10^{-2})^3 \\ &= 4 \times 10^{-6} \end{aligned}$$

2. Diketahui : kelarutan PbI_2 ($M_r = 461$) = 922 mg/L

Ditanya : $K_{sp} \text{ PbI}_2$

Penyelesaian :

$$\begin{aligned} \text{Kelarutan PbI}_2 \text{ dalam mol/L} &= \frac{\text{massa}}{M_r} \\ &= \frac{922 \times 10^{-3} \text{ gram/L}}{461 \text{ gram/mol}} \\ &= 2 \times 10^{-3} \text{ mol/L} \end{aligned}$$



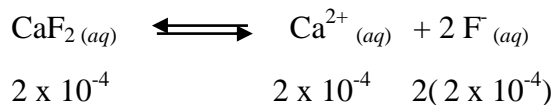
$$\begin{aligned} K_{sp} &= [\text{Pb}^{2+}] [\text{I}^-]^2 \\ &= (s) (2s)^2 \\ &= 4s^3 \\ &= 4 (2 \times 10^{-3})^3 \end{aligned}$$

$$= 3,2 \times 10^{-8}$$

3. Diketahui : konsentrasi Ca^{2+} dalam $\text{CaF}_2 = 2 \times 10^{-4} \text{ mol/L}$

Ditanya : $K_{sp} \text{ CaF}_2$

Penyelesaian :

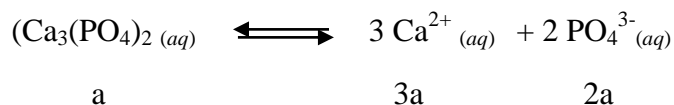


$$\begin{aligned} K_{sp} &= [\text{Ca}^{2+}] [\text{F}^-]^2 \\ &= (2 \times 10^{-4}) (2 \times 2 \times 10^{-4})^2 \\ &= 3,2 \times 10^{-12} \end{aligned}$$

4. Diketahui : kelarutan $(\text{Ca}_3(\text{PO}_4)_2 = a \text{ mol/L}$

Ditanya : $K_{sp} (\text{Ca}_3(\text{PO}_4)_2$

Penyelesaian :



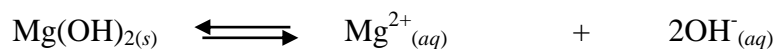
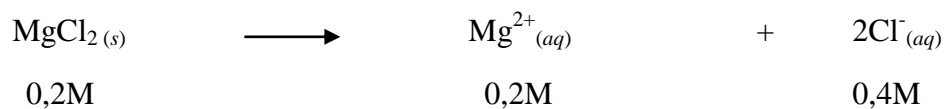
$$\begin{aligned} K_{sp} &= [\text{Ca}^{2+}]^3 [\text{PO}_4^{3-}]^2 \\ &= (3a)^3 (2a)^2 \\ &= 108a^5 \end{aligned}$$

5. Diketahui : $K_{sp} \text{ Mg(OH)}_2 = 1,2 \times 10^{-11}$

Larutan MgCl_2 0,2 M ditambah NaOH sehingga pH naik

Ditanya : Pada pH berapa mulai terbentuk endapan

Penyelesaian :



$$K_{sp} = [\text{Mg}^{2+}] [\text{OH}^-]^2$$

$$1,2 \times 10^{-12} \text{ M}^3 = 0,2\text{M} [\text{OH}^-]^2$$

$$\frac{1,2 \times 10^{-12} \text{ M}^3}{0,2\text{M}} = [\text{OH}^-]^2$$

$$7,7 \times 10^{-6} \text{ M} = [\text{OH}^-]$$

$$\text{pOH} = 6 - \log 7,7$$

$$\text{pOH} = 5,11$$

$$\text{pH} = 14 - 5,11 = 8,89 \cong 9$$