

Calcular la solubilidad molar de las siguientes especies

AgBrO<sub>3</sub> PKs=4.26

BaCO<sub>3</sub> pKs=8.09

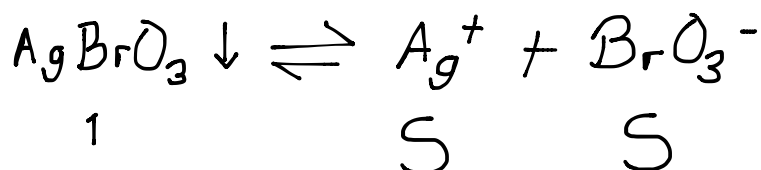
Ag<sub>3</sub>PO<sub>4</sub> pKs= 17.55

Ba(IO<sub>3</sub>)<sub>2</sub> pKs= 8.8



$$K_s = 10^{-PKs} = 10^{-4.26}$$

Se plantea la reacción de solubilidad



Todos los sólidos tienen actividad de 1 y las especies solubles se representan con una S que es solubilidad molar

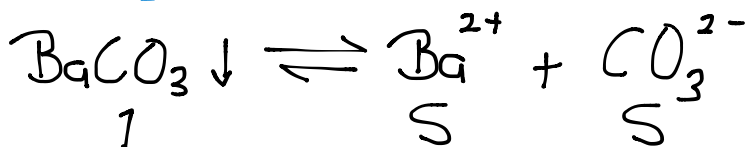
$$K_s = [\text{Ag}^+][\text{BrO}_3^-]$$

$$K_s = (S)(S)$$

$$S^2 = 10^{-4.26}$$

$$S = \sqrt[2]{10^{-4.26}} = 10^{-2.13} \text{ M}$$

Se siguen los mismos pasos con las demás especies



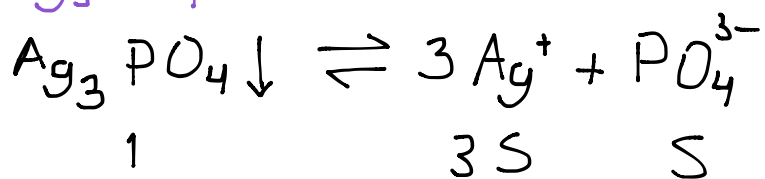
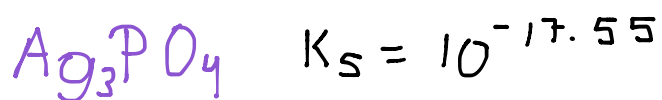
$$K_s = [\text{Ba}^{2+}][\text{CO}_3^{2-}]$$

$$10^{-8.09} = (S)(S)$$

$$S^2 = 10^{-8.09}$$

$$S = \sqrt[2]{10^{-8.09}}$$

$$S = 10^{-4.045} \text{ M}$$



$$K_s = [\text{Ag}^+]^3 [\text{PO}_4^{3-}]$$

$$K_s = (3S)^3 (S)$$

$$10^{-17.55} = (27S^3)(S)$$

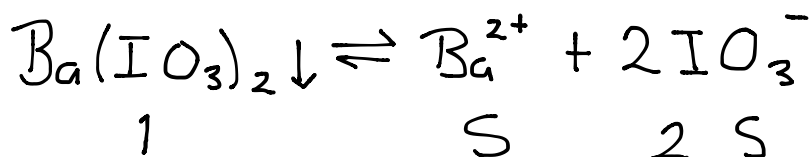
$$10^{-17.55} = 27S^4$$

$$S^4 = \frac{10^{-17.55}}{27}$$

$$S^4 = 10^{-18.98}$$

$$S = \sqrt[4]{10^{-18.98}}$$

$$S = 10^{-4.745} \text{ M}$$



$$K_s = [\text{Ba}^{2+}] [\text{IO}_3^-]^2$$

$$K_s = (S)(2S)^2$$

$$10^{-8.8} = (S)(4S^2)$$

$$10^{-8.8} = 4S^3$$

$$S^3 = \frac{10^{-8.8}}{4}$$

$$S^3 = 10^{-9.4}$$

$$S = \sqrt[3]{10^{-9.4}}$$

$$S = 10^{-3.13} \text{ M}$$