

For complete credit show all the work for the calculations and give the answers in the correct significant figures.

- 1) Write the balanced equation and solubility product expressions for the following solubility equilibria for the following compounds.
 - a) CuBr

 - b) ZnC_2O_4

- 2) The solubility of an ionic compound M_2X_3 (mol mass = 288 g/mol) is 3.6×10^{-17} g/L. What is the K_{sp} for this compound?

- 3) Calculate the molar solubility of CaF_2 . ($K_{sp} : 4.0 \times 10^{-11}$)

- 4) The pH of a saturated solution of a metal hydroxide, MOH is 9.68. Calculate the K_{sp} of this compound.

5) Calculate the molar solubility of AgCl in a 1.00 L solution containing 10.0 g of dissolved CaCl₂. (K_{sp} : 1.6×10^{-10})
(**Strategy**: a) calculate mols of Cl⁻ ions (don't forget mol ratio); b) add that to Cl⁻ ion conc. when setting up K_{sp} eq)

6) Will a precipitate form when
a) 235 mL of 0.0022 M MgCl₂ is added to 485 mL of 0.0055 M NaF. (K_{sp} : 3.7×10^{-8})

b) 136 mL of 0.00015 M Pb(NO₃)₂ is added to 234 mL of 0.00028 M Na₃AsO₄.
(K_{sp} : 4.0×10^{-36})

Bonus

7) Which of the following will be more soluble in acid solution than pure water?

a) CuI,

b) Ag₂SO₄,

c) Sn(OH)₂,

d) BaC₂O₄,

e) Ca₃(PO₄)₂.