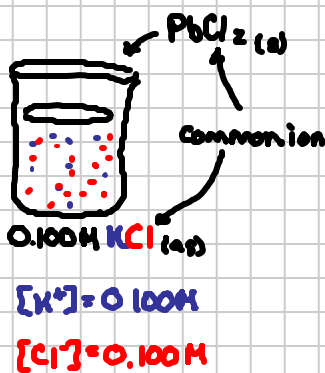


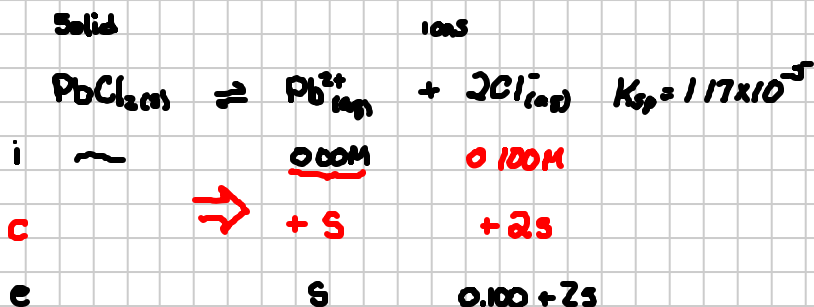
# Lecture 13.2 Solubility & the Common Ion

Note Title

10/52/2011



- less solid dissolves than in pure H<sub>2</sub>O



L.M.A.

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

$$1.17 \times 10^{-5} = S (0.100 + 2S)^2$$

$\approx S \approx 0$

$$1.17 \times 10^{-5} = S (0.100)^2$$

$$1.17 \times 10^{-3} = S$$

$K_{sp}$ .. small .. favors reactants  
 Right shift is small  
 $S \approx 0$  ☹

$$[Pb^{2+}] = 1.17 \times 10^{-3} = S$$

$$[Cl^-] = 2S + 0.100 = 0.10234M \approx 0.102M$$

$$\text{Molar Solubility} = S = \frac{1.17 \times 10^{-3} \text{ mol PbCl}_2}{1 \text{ L}}$$

Molar Mass PbCl<sub>2</sub>  
 278.10543/mol

$$\text{Gram Solubility} = G^* = \frac{0.325g \text{ PbCl}_2}{1L}$$

$$G_{PbCl_2, H_2O} = 3977g/L$$