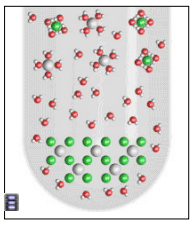
Chapter 18

- The common ion effect
- Buffer solutions
- Acid-Base titrations
- Solubility of Salts

Solubility of Lead(II) Chloride

$PbCl_2(s) \leftrightarrows Pb^{2+}(aq) + 2\ Cl^-(aq)$

$K_{sp} = 1.9 \times 10^{-5} = [Pb^{2+}][Cl^-]^2$



Solubility of Silver Chloride

	$Ag^+(aq) + NO_3^-(aq)$	*Soluble*
+	$Na^+(aq) + Cl^-(aq)$	*Soluble*
	$Na^+(aq) + NO_3^-(aq)$	*Soluble*
	$Ag^+(aq) + Cl^-(aq)$	*Soluble(?)*

Dilute Solutions: No Precipitation

Concentrated Solutions: Precipitation

Precipitating an Insoluble Salt

$Hg_2Cl_2(s) \leftrightarrows Hg_2^{2+}(aq) + 2\ Cl^-(aq)$

$K_{sp} = 1.1 \times 10^{-18} = [Hg_2^{2+}]\ [Cl^-]^2$

Recognize that

K_{sp} = product of maximum ion concs.

Precip. begins when product of ion concs. EXCEEDS the K_{sp}.