AP Chemistry Daily Videos

7.13 pH and Solubility

Video #1

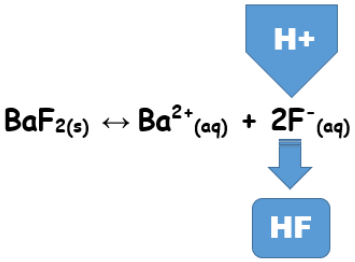
1. What is the generic neutralization reaction?

2. What ion should you think about when you are told a solution has been acidified? What ion is associated with a base or alkaline solutions?

3. You know that opposite charges _____. When you have a solution with acidic or basic ions in it, meaning the solution has a pH other than 7, watch out, these ions will bond with ions from the salt - essentially reducing their concentration and shifting the reaction.

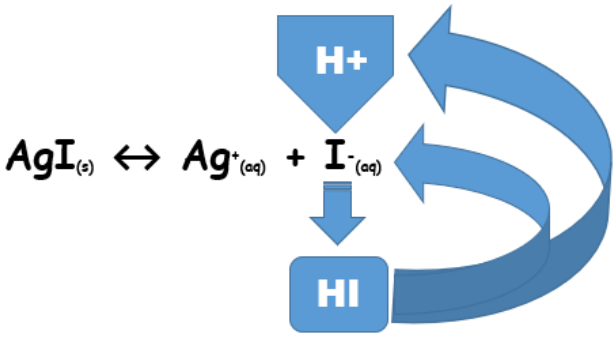
   Ex: $BaF_{2(s)} \leftrightarrow Ba^{2+}_{(aq)} + 2F^{-}_{(aq)}$ Predict what will happen in an acidic solution?

   Check: The concentration of fluoride ion decreases, shifting the reaction in the forward direction, increasing solubility. Fluoride ion decreases because it bonds with H+ ions, forming a weak acid. Evaluate your prediction.



4. Ex: $AgI_{(s)} \leftrightarrow Ag^{+}_{(aq)} + I^{-}_{(aq)}$ Predict what will happen in an acidic solution?

Check: Evaluate your prediction.



However, HI is a strong acid, meaning it dissociates back into ions, having no effect on concentrations and therefore no impact on the solubility of AgI.

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5. Evaluate your answer to the following question.

$$Zn(OH)_2(s) \rightleftharpoons Zn^{2+}(aq) + 2OH^-(aq)$$

Will the mass of zinc hydroxide increase or decrease if a small amount of soluble potassium hydroxide is added to a saturated solution? Justify your answer using the reaction quotient, Q.