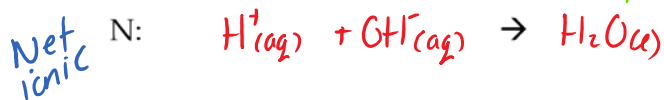


III) Writing Formula (Molecular), Complete Ionic and Net Ionic Equations for Acid/Base Reactions

March 5, 2018 1:46 PM

III) Writing Formula (Molecular), Complete Ionic, and Net Ionic Equations for Acid/Base Reactions

1. Strong Acid/Strong Base (Neutralization):

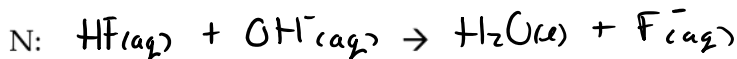
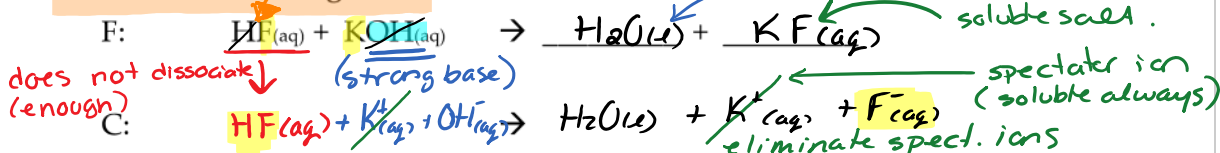


water + ionic salt.
check solubility table
- soluble (aq)
- low solubility (s)

11

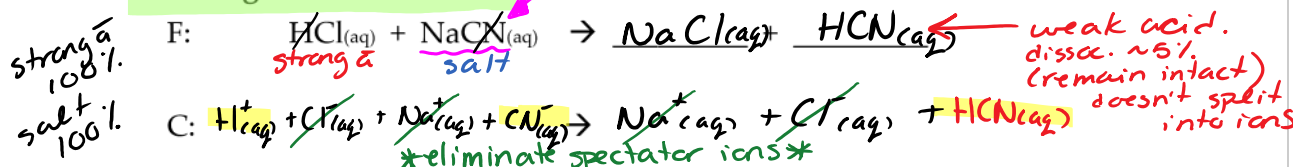
Since 100% of strong acids and bases dissociate, they should be written as ions in the complete ionic and net ionic equations. If the resulting salt is low solubility and precipitates, it is included in the net ionic equation.

2. Weak Acid/Strong Base:



Since less than 5% of weak acids and bases dissociate, don't split them into ions for the complete ionic and net ionic equations, since the majority of weak acid molecules stay intact.

3. Strong Acid/Weak Base:



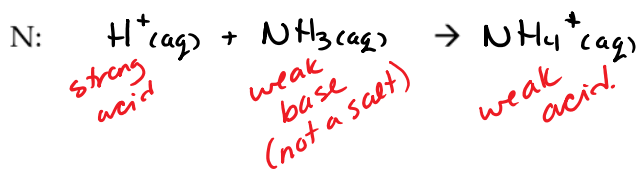
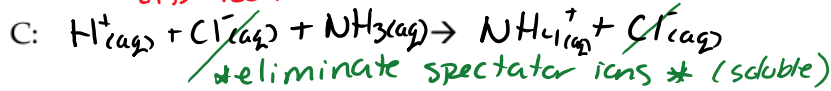
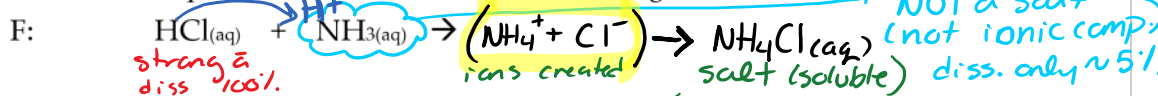
eg. CN⁻ will accept H⁺



eg. CN^- will accept H^+

Many weak bases **originate as salts** since weak bases often have a negative charge. The salt will dissociate 100% into ions, and the weak base component will then react 100% due to the strong acid present.

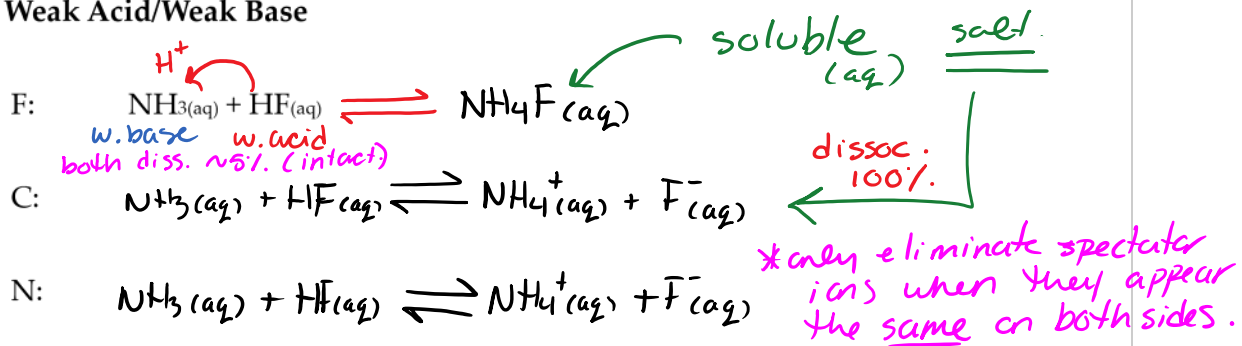
Here is an example when the weak base does not originate as a salt:



Sometimes when an acid and base react, **only a salt is produced as the base does not contain OH⁻, so no water can form.**

** equilibrium **

4. Weak Acid/Weak Base



Assignment 4 Write Formula (Molecular), Complete Ionic, and Net Ionic Equations for the following Acid/Base reactions:

- $\text{HClO}_4(\text{aq}) + \text{KOH}(\text{aq}) \rightarrow$
- $\text{HBr}(\text{aq}) + \text{NaCH}_3\text{COO}(\text{aq}) \rightarrow$
- $\text{HCOOH}(\text{aq}) + \text{LiOH}(\text{aq}) \rightarrow$
- $\text{HI}(\text{aq}) + \text{NH}_3(\text{aq}) \rightarrow$
- $\text{Sr}(\text{OH})_2(\text{aq}) + \text{HNO}_3(\text{aq}) \rightarrow$
- $\text{NaCN}(\text{aq}) + \text{NH}_4\text{Cl}(\text{aq}) \rightarrow$