

# Reactions of Weak Acids and Bases

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In Net Ionic Equations weak electrolytes are written in molecular form!!

Examples - Weak acids such as  $\text{HC}_2\text{H}_3\text{O}_2$ ,  $\text{H}_2\text{S}$ ,  $\text{H}_2\text{SO}_3$  and the anions of polyprotic strong acids such as  $\text{HSO}_4^-$

- 1. Reaction of Strong Acid and Strong Base
- $\text{HA} + \text{MOH} \rightarrow \text{MA} + \text{H}_2\text{O}$
- *Net Ionic*
- $\text{H}^+ + \text{OH}^- \rightarrow \text{H}_2\text{O}$
- 2. Reaction of Weak Acid and Strong Base
  - $\text{HA} + \text{MOH} \rightarrow \text{MA} + \text{H}_2\text{O}$
  - *Net Ionic*
  - $\text{HA} + \text{OH}^- \rightarrow \text{A}^- + \text{H}_2\text{O}$
- 3. Reaction of Strong Acid and Weak Base ( $\text{NH}_3$ )
- $\text{HA} + \text{NH}_3 \rightarrow \text{NH}_4\text{A}$
- *Net Ionic*
- $\text{H}^+ + \text{NH}_3 \rightarrow \text{NH}_4^+$
- 4. Reaction of Weak Acid and Weak Base
- $\text{HA} + \text{NH}_3 \rightarrow \text{NH}_4\text{A}$
- *Net Ionic*
- $\text{HA} + \text{NH}_3 \rightarrow \text{NH}_4^+ + \text{A}^-$
- 5. Formation of a Weak Acid
- $\text{HA} + \text{MB} \rightarrow \text{MA} + \text{HB}$
- Example -  $\text{HCl} + \text{KC}_2\text{H}_3\text{O}_2 \rightarrow \text{KCl} + \text{HC}_2\text{H}_3\text{O}_2$
- *Net Ionic*
- $\text{H}^+ + \text{B}^- \rightarrow \text{HB}$
- Example -  $\text{H}^+ + \text{C}_2\text{H}_3\text{O}_2^- \rightarrow \text{HC}_2\text{H}_3\text{O}_2$
- 6. Formation of a Precipitate
- $\text{XY}(\text{aq}) + \text{CD}(\text{aq}) \rightarrow \text{XD}(\text{aq}) + \text{CY}(\text{s})$
- *Net Ionic*
- $\text{C}^+(\text{aq}) + \text{Y}^-(\text{aq}) \rightarrow \text{CY}(\text{s})$

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