

CHEM 101 Day 9

Precipitation reaction

Two solutions, when combined, form a solid

Acid-base reaction

Driving force is the creation of a stable covalent compound (water)



Oxidation - Reduction

Driving force is the decrease in electrical potential. One or more electrons are transferred between reaction partners



What are substances like in water?

Sugar ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$) covalent compound. When dissolved, remains intact (does not dissociate/break up)

NaCl (ionic compound). When dissolved, dissociates/ionizes. $\text{NaCl} \xrightarrow{\text{water}} \text{Na}^+ + \text{Cl}^-$

Electrolyte

Any substance that will conduct electricity when dissolved in water. Non-electrolytes do not. Weak electrolytes conduct a little (only partially dissociate)



H_2O is not an electrolyte (pure water). Ions in the water causes it to conduct.

Strong electrolytes

- Any ionic compound that dissolves in water
- Strong acids (HCl , HBr , HI , HNO_3 , H_2SO_4 , HClO_4)
- Strong bases (Group 1 (NaOH , LiOH , KOH , ...) and Group 2 ($\text{Ba}(\text{OH})_2$, $\text{Ca}(\text{OH})_2$, ...)) hydroxides



Non-electrolytes

- Any covalent compounds (H_2O , $\text{C}_{12}\text{H}_{22}\text{O}_{11}$, CH_3OH , ...) A large amount of carbons, hydrogens, and oxygens indicates a non-electrolyte

Weak electrolytes

- Weak acids (CH_3COOH , HF) -COOH indicates a weak, organic acid
- Weak bases (NH_3)