

Aqueous Solution Continued

Neutralization Reaction

- These are reactions involving an acid and a base.
- The result of a neutralization reaction is a salt (contains cation and anion) and water

Recognizing acids and bases

Most often, acids will contain a “lone” Hydrogen atom.

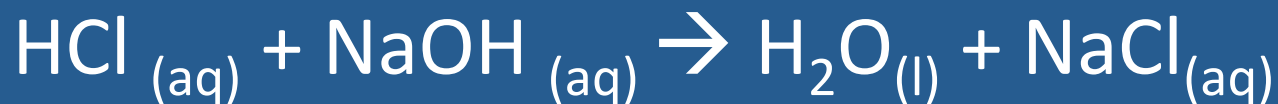
- Ex. HCl, HBr, HCH_3COO , HF, HNO_3 , H_2SO_4
- Sulfuric acid has 2 Hydrogen atoms because SO_4 has a 2-charge.



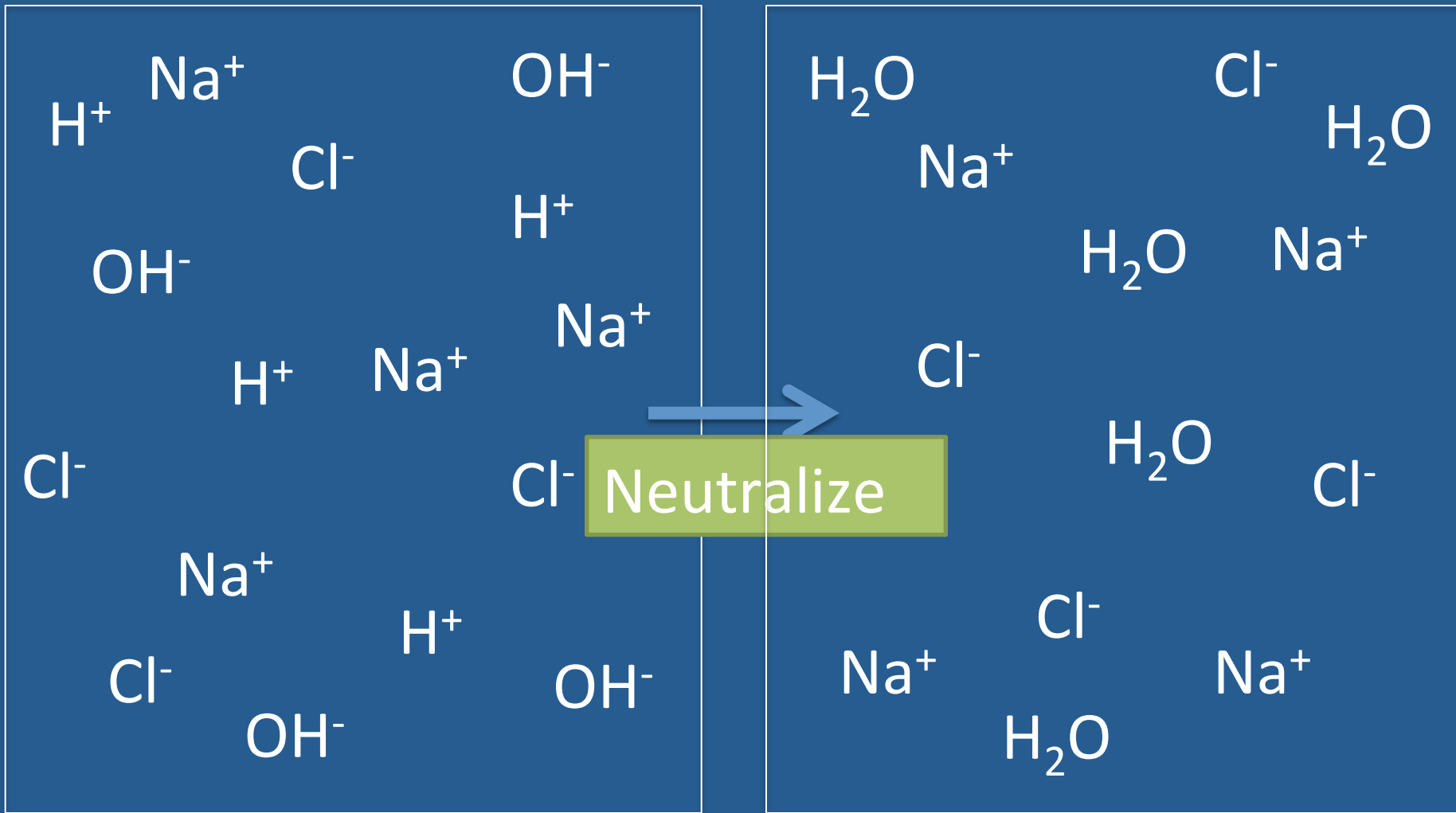
- While most bases contain a “hydroxide ion” or “-OH”
- Example:
 - NaOH Sodium Hydroxide
 - KOH Potassium hydroxide
 - LiOH Lithium hydroxide
- Exception: NH_3 – Ammonia, which is a weak base

- During a neutralization reaction, a double displacement reaction will occur.
- The H^+ ion is donated by the acid to join with the hydroxide ion (OH^-) of the base to form water.
- The remaining cation and anion form an ionic compound.

- Ex.

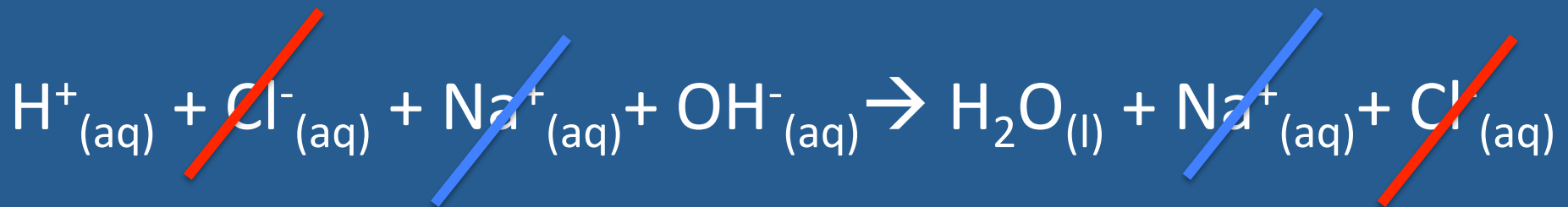


What would it look like at the symbolic level?

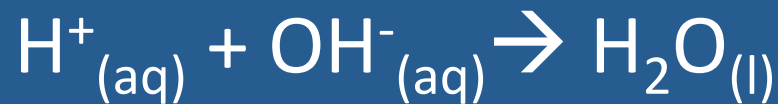


Writing net ionic reaction of a neutralization reaction

- A net ionic reaction can be written for a neutralization reaction:



Net ionic reaction:



- Write the complete set of reactions that occur when the following acid and bases are reacted.

Acetic acid and sodium hydroxide.

Sulphuric acid and potassium hydroxide.

Nitric acid and calcium hydroxide.

Phosphoric acid and lithium hydroxide.

Sulphuric acid and aluminum hydroxide.

Sulfurous acid and magnesium hydroxide.

Nitrous acid and barium hydroxide.

Hydrochloric acid and magnesium hydroxide.

Aluminum hydroxide and nitric acid.