

Of Bonds...

and Bases...



# Bonding

Interactions between atoms that hold them together. Kinda like a hug.

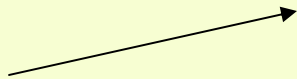
Just as there are different types of hugs, there are different types of bonds with their own characteristics.

We will deal with two types today

# Covalent Bonds

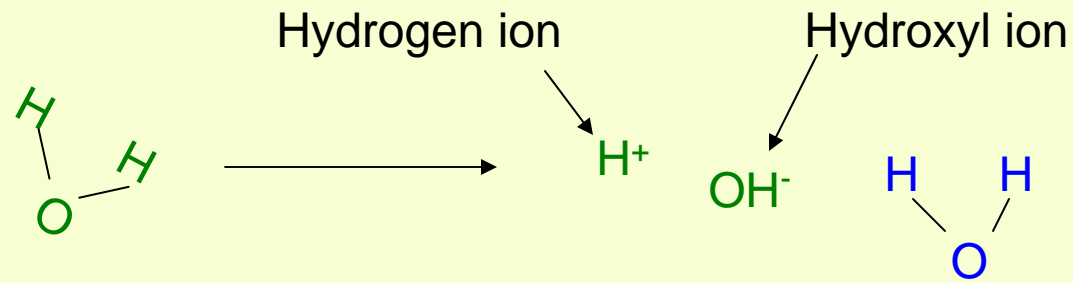
- Typically stronger
- Involve the sharing of electrons between atoms
- These bond atoms together to form molecules

Covalent  
bond



# Strong but not unbreakable

- **Atoms and molecules** are always in motion and **bumping into one another**.

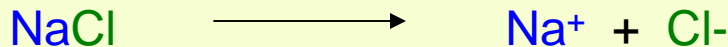


- Sometimes these **collisions break molecules** like water **into charged particles** called **IONS**. This is a **process** called **dissociation**.

# Ionic Bonds

Opposites attract. When ions of different charges stick to one another, an IONIC BOND is formed. These bonds are...

- **weaker** than covalent bonds (typically).
- **electrostatic** (think of rubbing a balloon on your head and sticking it to the wall)
- do not form true molecules.

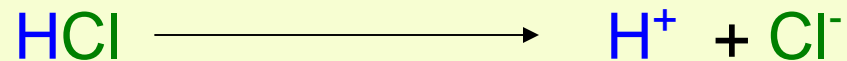


basic table salt

ions

# Acidity

- A solution that has more H<sup>+</sup> than OH<sup>-</sup> is considered acidic.
- Solutions of water and HCl are acidic because...
- HCl provides H<sup>+</sup> but no OH<sup>-</sup>
- Water dissociates into equal numbers of hydrogen and hydroxyl ions so it is neutral.

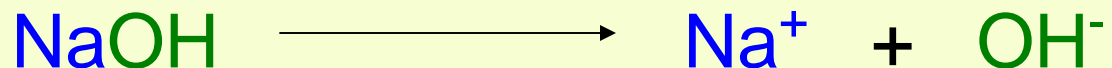


# Basicity (Being a base)

- Some substances will provide **more OH- than H+**
- These substances are considered basic (There are other ways of describing acids and bases but we'll leave that for next year)

For example:

- Drano aka **lye is a base = NaOH**



# Measuring Acidity

- pH is a way of reporting acidity.
- It is a measure of how many  $H^+$  there are in a solution.
- The more  $H^+$  the lower the number
- A pH of 7 is neutral.
- Lower than 7 is acidic; higher than 7 is basic.

# Neutralizations

- If there are more  $H^+$  than  $OH^-$ , the pH will be below 7
- Adding a substance that adds more  $OH^-$  (or takes up the  $H^+$ ) will equalize the ratio of  $H^+$  to  $OH^-$
- Tums Tum Tum Tums....