ACDSAND BASES

Acid and Base Strength



- Acids and Bases are found in your home and used often.
- They include vinegar, antacids, lemons, and soap.
- These acids and bases are considered weak acid and bases.
- Strong acid and bases are dangerous and must be handled with much caution.

Examples

- Strong Acids
 - Hydrochloric acid (HCl)
 - Nitric acid (HNO₃)
 - Sulfuric acid (H₂SO₄)
- Strong Bases
 - Sodium hydroxide (NaOH)
 - Calcium hydroxide(Ca(OH)₂)
 - Potassium hydroxide (KOH)

Weak Acids Acetic Acid (vinegar) CH₃COOH Carbonic Acid (found in soft drinks) H₂CO₃

Weak Bases

Ammonia NH3

Tums/antacids Magnesium hydroxide Mg(OH)₂

DRAIN OPENER

Contains concentrated acid can disso as paper, cloth, grease, food, vegetat then turns the drain wide open.

CAUTION:

1) Must wear protective rubber gloves use. Danger, avoid contact directly with cause burning. If, flush with water & see 2) Cannot be diluted or used together use just after apply of other chemicals



Strong Acids and Bases

- When acids and bases mix with water, form ions.
- For example when HCI mixes with water, H⁺ and Cl⁻ ions form
 None of the HCI remains intake
 When an acid or base is <u>completely ionized</u> or <u>completely split apart</u>,
- this represents a strong acid.





Weak Acid and Bases

When an acid or base is <u>not completely</u> <u>ionized</u> or <u>not completely split apart</u>, this represents a <u>weak acid</u>.
For example, when Acetic Acid, CH₃COOH, Mixes with water only some ions form: H⁺ and CH3COO⁻

Most of the acid remains as CH₃COOH





Electrolytes

- Strong Acids and Bases
- We can determine what is actually going on in a solution by measuring its ability to conduct an electric current.
 - A solution can conduct a current in proportion to the number of ions that are present.
 - When 1 mole of HCI is dissolved in 1L of water, the resulting solution is an excellent conductor.
 - HCl is a strong electrolyte.
 - This is the same for strong bases like sodium hydroxide (NaOH)



Electrolytes

Weak Acids and Bases



- Acetic acid is a weak electrolyte, which means that only a few ions are present.
 - Acetic acid is a weak acid.
 - This is the same for the weak bases like ammonia, NH₃



