PH Scale and pH Indicators

THE STRENGTH OF ACIDS AND BASES

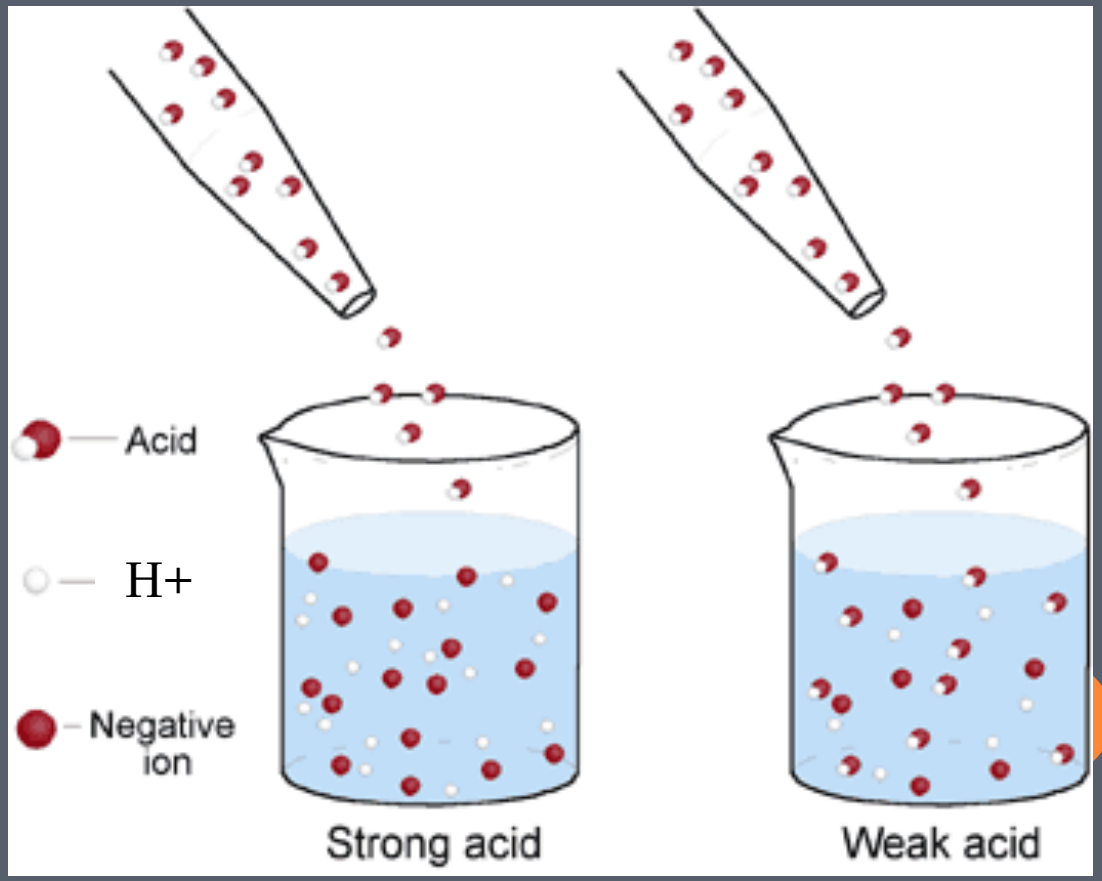
- The strength of acids and bases are not all equal.
- Some acids and bases are safe enough to eat while others can eat through clothing and metal.

THE STRENGTH OF ACIDS AND BASES

- -**Strong** acids and bases are extremely reactive and corrosive.
- -**Weak** acids and bases are mostly unreactive and corrosive.

THE STRENGTH OF ACIDS AND BASES.

- The strength of an acid is determined by its ability to produce hydrogen ions (H^+) when it is mixed with water.



THE STRENGTH OF ACIDS AND BASES

- Weak acids break up less and thus release less hydrogen ions (H+).

- The more hydrogen ions there are, the **lower** the **pH** value.

THE PH SCALE

- pH scale ranges from 0-14 with very acidic being 0, neutral being 7, and very basic being 14.

- 7.0 is neutral (neither acidic nor basic).
  - **Acids range from 0-6.9**
  - **Bases range from 7.1 -14**

- Strong acid pH 1 to 3
- Weak acid pH 4 to 6
- Weak bases pH 8 to 10
- Strong bases pH 11 to 14

THE PH SCALE


The pH Scale
Hydrochloric acid
Lemon
Apple
Banana
Water
Baking soda
Ammonia
Drain cleaner
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Most acidic
Most basic
Vinegar
Tomato
Milk
Blood
Soap

INDICATORS

- Agents that are added to substances to indicate the pH level

- Phenolphthalein
- Universal indicator
- Cabbage juice
- Beet juice
- Litmus paper

Indicators

- Cabbage

pH	2	4	6	8	10	12
Color	Red	Purple	Violet	Blue	Blue-Green	Greenish Yellow

- Universal Indicator

pH range	Description	Colour
< 3	Strong Acid	Red
3-6	Weak Acid	Orange/Yellow
7	Neutral	Green
8-11	Weak Base	Blue
> 11	Strong Base	Violet/Purple