

## 5.1 Classifying Ionic Compounds

### Science 10 Notes

#### Ionic Compounds Review

Ionic compounds form between a metal and a non-metal.

- All ionic compounds conduct electricity when dissolved in water.

They are classified into 3 categories:

#### Acids citric acid is found in citrus fruits.

- Taste: sour
- Reacts with some metals to produce H<sub>2</sub>
- Turns Litmus paper red
- Produce H<sup>+</sup> when dissolved in water
- Formulas USUALLY start with H

#### Bases - found in a lot of household cleaners.

- Taste: bitter
- Feels: slippery
- Turns Litmus paper blue
- Produce OH<sup>-</sup> when dissolved in water
- Formulas USUALLY end with OH

#### Salts

- Any ionic compound that is not an acid or base
- Can be created by 3 different reactions:
  - A neutralization reaction
  - A reaction between an acid and a metal
  - A reaction between an acid and a carbonate or oxide
- These 3 reactions are in more detail on the next page

salts are also called electrolytes.

eg

HCl - stomach acid  
hydrochloric acid

H<sub>2</sub>SO<sub>4</sub> - car battery acid  
sulfuric acid.

H<sub>3</sub>C<sub>6</sub>H<sub>5</sub>O<sub>7</sub> - citric acid

CH<sub>3</sub>COOH - acetic acid  
vinegar

NaOH

KOH - found in your stomach

NH<sub>4</sub>OH - household cleaner

Al(OH)<sub>3</sub> - antacid

eg

NaCl

MgF<sub>2</sub> magnesium fluoride

CuSO<sub>4</sub> copper (II) sulfate

## Indicators

- There are some dyes that change colour in the presence of an acid or base
- A common indicator is litmus paper.

Indicator	Acid	Base
Litmus	red	blue
Phenolphthalein	colourless	pink.
Bromothymol Blue	yellow	blue

- Indicators can be used to test the strength of an acid or a base

## Neutralization Reactions

- When acids and bases combine, they form salt and water. This is called a neutralization reaction, because the acid and the base are neutralized if the acid and base are equal strengths. The properties of the acid and base are neutralized. as the water and salt are formed.



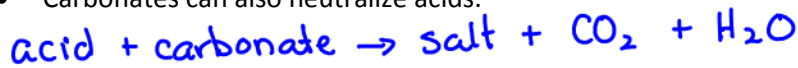
neutralization requires a specific amount of acid and base.

base

add too much acid  $\rightarrow$  acid  
not enough acid  $\rightarrow$  base  
just right amount  $\rightarrow$  neutralized

## Carbonates and Buffers

- Carbonates can also neutralize acids.



- Buffers can neutralize both acids and bases. You will learn about buffers if you take Chemistry 11

Heartburn is caused by too much stomach acid. One common remedy is to drink baking soda (sodium bicarbonate). The carbonate helps neutralize the stomach acid

## Acids and Metals

- Acids will react with metals.
  - One reactant is H<sub>2</sub>
  - The other reactant is salt



\* one of the properties of acids is that they react with metal