

Acids

- Acids form a class of chemical substances which contain hydrogen ions in aqueous solution, H^+ (aq), as the only positive ion.
- Acids are usually classified into mineral or organic acids.

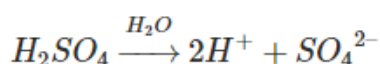
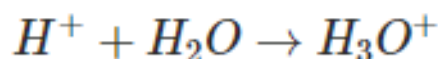
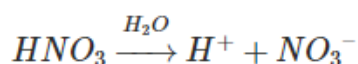
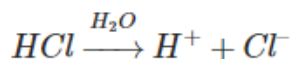
Mineral Acids

- Generally much stronger
- Most do not occur naturally
- Usually have simpler molecules
- Examples :-
 - Sulphuric Acid
 - Nitric Acid
 - Hydrochloric Acid



Organic Acids

- Naturally occurring
- Found in vegetables, fruits, and other foodstuffs
- Examples :-
 - Citric acid
 - Lactic acid
 - Tartaric acid
 - Acids are substances that form hydrogen ions when dissolved in water
 - A hydrogen ion is actually a proton
 - Therefore, acids are called the proton donors
- Examples :-



The hydrogen ions produced will combine with the water molecule to form hydroxonium ions (H_3O^+)

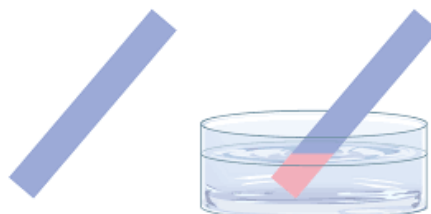


Physical properties of Acid

- Acids have the following physical properties :-
 - Tastes sour
 - Turns blue litmus to red
- pH value < 7
- Can conduct electricity
- Corrosive

Colour of litmus in Acids

- Litmus can be used as acid/alkali indicator.
- Image below shows the colour of litmus paper when immerse in acid
- The litmus turn red in acids.



pH Value of Acids

- pH value is quantity to measure the concentration of hydrogen ions in a solution.
- The higher the concentration of hydrogen, the lower the pH value of the solution.
- Pure water has pH value of 7.
- All acids has pH value lower than 7.

Electrical Conductivity of Acids

- Acids are covalent compounds.
- However, when acids dissolve in water, they ionise to form ions in the solution.
- Since there are free moving ions in the solution, hence the solution can act as an electrolyte to conduct electricity.

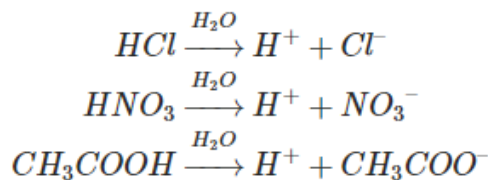


Basicity of Acids

- Basicity of an acid is the number of hydrogen ions which can be produced by one molecule of the acid.
- There are 3 common types of basicity of an acid :-
 - monoprotic
 - diprotic
 - triprotic

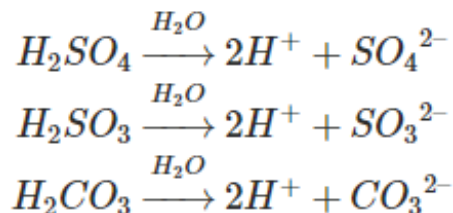
Monoprotic Acids

- The monoprotic acids are the acids that produced 1 H⁺ ion from each acid molecule.
- Examples :-



Diprotic Acids

- The diprotic acids are the acids that produced 2 H⁺ ion from each acid molecule.
- Examples :-



Triprotic Acids

- The triprotic acids are the acids that produced 3 H⁺ ion from each acid molecule.
- Examples :-

