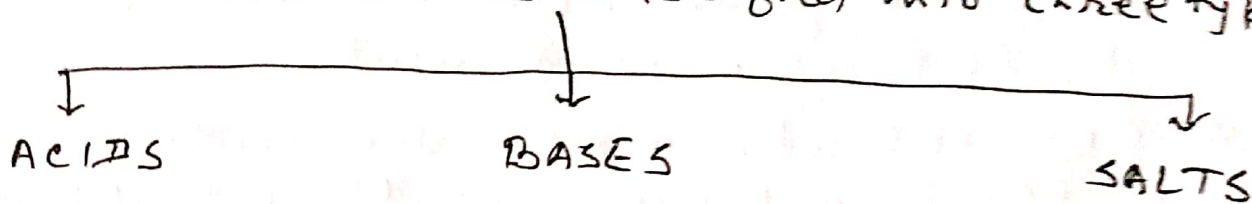


TOPIC - ACIDS

On the basis of chemical properties, substances can be classified into three types



Acids— The chemical substances having ability to donate hydrogen ion (H^+) in aqueous solution are called acids.

In simple words, the chemical substances having a sour taste are called acids.

Example— Hydrochloric acid (HCl), Sulphuric acid (H_2SO_4), Nitric acid (HNO_3), Sulphurous acid (H_2SO_3), Nitrous acid (HNO_2), Formic acid ($HCOOH$), Acetic acid (CH_3COOH), etc.

* **Mineral acids**— The acids which are prepared from minerals are called mineral acids.

Ex - HCl , H_2SO_4 , H_2SO_3 , HNO_2 , HNO_3 , H_3PO_4 , H_2CO_3 etc.

* **Organic acids**— The acids present in plants and animals are called organic acids.

Ex - $HCOOH$, CH_3COOH , CH_3CH_2COOH , $(COOH)_2$, C_6H_5COOH , etc.

* **Strong acids**— The acids which get dissociated ~~completely~~ (rapidly) in water to give H^+ are called strong acids.

Mineral acids are strong acids. H_2CO_3 is a mineral acid, but it is a weak acid.

* Weak acids - The acids which get dissociated slowly in water to give H^+ are called weak acids.

Organic acids are weak acids.

H_2CO_3 is also weak acid.

* Concentrated acids - The acids which contain more acid than water are called concentrated acids. They are written as - Conc. HCl , Conc. H_2SO_4 .

* Concentrated mineral acids are very dangerous

* Dilute acids - The acids which contain more water are called dilute acids. They are written as - dil. HCl , dil. H_2SO_4 .

* Diluting acids

A concentrated acid is diluted by mixing it with water. The process of mixing of concentrated acid with water is highly exothermic. So, when conc. acid & water are mixed together, a lot of heat is evolved. Due to this, dilution of a concentrated acid should always be done by adding concentrated acid to water gradually with continuous stirring. Water is never added to acid.

When conc. acid is added slowly to water with stirring, the heat evolved is absorbed by water. But, when water is added to acid at once, some water is converted into steam due to evolution of large amount of heat. Due to this acid can be splashed on us and acid burns ~~may~~ can be caused.
