Chemistry
Notes: Neutralization

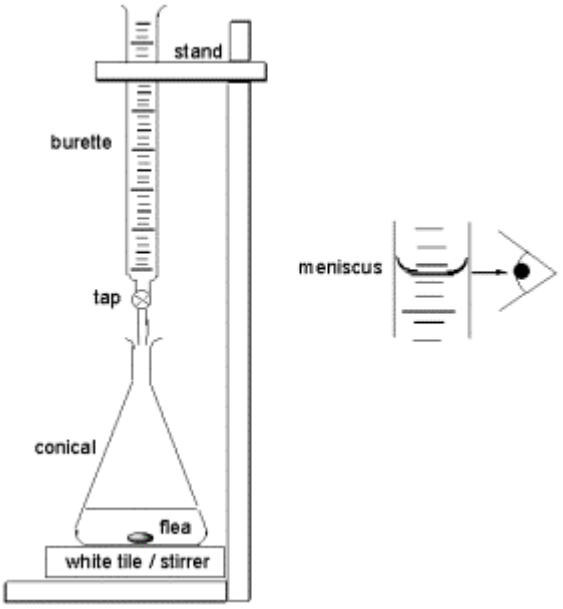
Neutralization Reaction: A reaction where an acid and a base react to form water and a salt; can be used to create a pure sample of a salt or to determine the concentration of an acid or a base in a solution.

Examples: $HCl + NaOH \text{ -----> } NaCl + H_2O$

$H_2SO_4 + 2NaOH \text{ ----> } 2H_2O + Na_2SO_4$

Titration:

The process of adding a known amount of a solution of known concentration to determine the concentration of another solution; is continued until the indicator shows that the neutralization has just occurred.



Standard Solution: The solution of known concentration.

End point: The point at which the indicator changes color.

Equivalence point: The point of neutralization in a titration.

Equivalent: The amount of acid (or base) that will give one mole of hydrogen (or hydroxide) ions; for example, one mole of HCl is one equivalent of HCl.

Normality: The concentration expressed as the number of equivalents of solute in one liter of solution.

Example:

Buffers: Solutions in which the pH remains relatively constant when small amounts of acid or base are added; a solution of a weak acid and one of its salts or a solution of a weak base and one of its salts.

buffer capacity: The amount of acid or base that can be added to a buffer solution before a significant change in pH occurs.

Solubility product constant (K_{sp}) : The product of the concentration terms each raised to the power of the coefficient of the substance in the dissociation reaction.

common ion: An ion that is common to both salts.

common ion effect: Lowering of the solubility of a substance by the addition of a common ion.