Titration

Titration is one of the important technique that is used by students frequently and thus it is essential to understand this technique along with the technical words associated with it. Generally, the reactions that are studied by the titration techniques are kinetically fast. The term titration or titrimetric analysis means quantitative estimation of measured volume of an unknown substance through its reaction with a solution of known substance. The titration typically requires A pipette to measure the volume of solution whose concentration is to be determined. A burette through which the solution of known concentration called as a standard solution is added. A conical flask or Erlenmeyer flask where the reaction takes place. An indicator is a substance which helps in determining the completion of reaction.

Theory:

The accuracy of a titrimetric method is dependent on the accuracy of the concentration of the standard solution. At the end of titration, the mass of unknown substance is calculated from the volume of the standard solution used, the stoichiometry of the reaction and the molecular masses of chemicals involved in the chemical reactions. The reagent with known concentration is often referred as *titrant* whereas the reagent that is estimated is called as *titrant*. The process of adding a titrant to titrant is called as *titration*. The theoretical point at which the chemical reaction between titrant and titrant is complete or the titration is over is called as *equivalence point*. Generally, in a titration such a point is determined visibly with use of another substance that is called as *indicator*. Indicator changes its color when the reaction between titrant and titrant is practically completed. In practice, the point at which the indicator changes its color always differ slightly from the equivalence point and thus, this point is referred as *end point* of the titration.