Editorial

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Different types of Chromatography and Paper Chromatography

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Chromatography is relatively a new technique which was first invented by Micheal Tsweet , a Russian botanist in1906. Since ,then the technique has undergone tremendous modification, so that now a days various types of chromatography are in use to separate almost any given mixture. The name “chromatography” colour writing.

Essentially the technique of chromatography is baes on difference in the rate at which the compounds of a mixture move through porous medium called stationary phase under the influence of some solvent orgas called mobilephase.

Classification of chromatography

Several methods are given by several scientists based on the stationary phase employed during this, chromatography is divided into two broad categories namely “Absorption Chromatography” and “Partition Chromatography”. When the stationary phase is solid , the technique is called adsorption type , on the other hand where the liquid is stationary phase the technique is called Partition Chromatography.

Another classification for the chromatography is based on both stationary and mobile phase employed. According to this, there are four types of chromatography namely,

- Solid-liquid Chromatography

Eg: Thin layer Chromatography, Column Chromatography, Ion exchange chromatography

- Gas-solid Chromatography

Eg: Gas solid Chromatography

- Liquid-Liquid Chromatography

Eg: Paper Chromatography

- Gas-Liquid Chromatography

Eg: Gas Liquid Chromatography

Paper Chromatography

Paper Chromatography is a special case of partition chromatography in which the absorbent column is paper strip.

This technique is a type of partition chromatography in which the substances are distributed between two liquids in which one stationary liquid usually water which is held in the cellulosefibre of the paper and called the “stationary phase”. The other solvent is moving liquid or the developing solvent which is called “moving phase or mobile phase”.

The component of the mixture to be seperated migrate at different rates and approaches appear as different point on the paper. In this technique, a drop of the test solution is applied as a small spot on the Whattman filter paper and the spot is dried. Then the paper is dipped into a solvent called “Developing solvent”. As soon as the filter paper comes in contact with the liquid through its capillary axis and reaches the spot of the test solution,various substances are moved by solvent systems, are visualized by suitable reagents called “Visualizing or Spraying or Chromatographic agents”.

Rf value is the ratio of “distance travelled by the solute from origin to the distance travelled by the solvent from baseline”. Rf value is constant for a given substance in a particular solvent system. Therefore it is a qualitative tool.
Types of Paper Chromatography

- Ascending Paper chromatography
- Descending Paper Chromatography
- Radial or Circular Paper Chromatography
- Two dimensional Paper Chromatography