# SEPARATION OF AMINO ACIDS BY PAPER CHROMATOGRAPHY

**AIM-** The aim of the experiment is to perform Ascending paper chromatography for the separation of amino acids present in the given sample.

#### BACKGROUND-

Chromatography is used to separate mixtures of substances into their individual components. All forms of chromatography work on the same principle. They all have basic requirements of stationary phase (a solid or a liquid supported on a solid) and a mobile phase (a liquid or a gas). The mobile phase flows through the stationary phase and carries the components of the mixture with it. Different components travel at different rates based on their affinities toward stationary phase and mobile phase.

In paper chromatography, the stationary phase is a very uniform adsorbent paper. The mobile phase is a suitable liquid solvent or mixture of solvents.

#### Retention (or) retardation factor (Rf)-

Retention factor is defined the ratio of the distance travelled by the solute to the distance travelled by solvent. The distance travelled relative to the solvent is called the  $R_{\rm f}$  value.

 $Rf = \frac{\text{distance moved by the substance from origin}}{\text{distance moved by solvent from origin}}$ 

The value of setardation factor should be between 0-1 it has no units.

The sequence of steps involved during the reaction between ninhydrin and amino acids to produce purple (or) yellow-orange colour.

#### REQUIREMENTS-

Apparatus: Glass beakers
Whatmann filter paper
Petridishes
Measuring cylinder
Developing chamber and capillary tubes etc.
Chemicals: n-butanol
Glacial acetic acid
Distilled water (4:1:5)
Amino acids (Tryptophan and threonine)
Ninhydrin reagents.

#### Solvents system and its preparation methods

1. n-butanol and water are taken in 4:5 ratios in a conical flask and allow

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**U.S. Atomic Energy Commission** 

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