CENTRIFUGE

Centrifugation is a process which separates or concentrates materials suspended in a liquid medium. The theoretical basis of this technique is the effect of gravity on particles in suspension. 2 particles of different masses will settle in a tube at different rates in response to gravity. The centrifugal force is proportional to the rotation rate of the rotor. The centrifuge consists of a rotor and closed in a refrigerated chamber buy an electric motor.

Principle of Centrifugation

1) The centrifuge involve the s principle of sedimentation.

2) The principle of the centrifugation technique is to separate the particles suspended in liquid media under the influence of a centrifugal field. These are placed either in tubes or bottles in a rotor in the centrifuge.

3) Sedimentation is a phenomenon where suspended material settles out of the fluids by gravity. The suspended material can be particles such as clay or powder. Example, tea leaves falling to the bottom in a teacup.

4) The particles having size more than 5 micrometres are separated by simple filtration process while the particles having size 5 micrometre or less do not sediment under gravity. The central force is useful to separate those particles.

Application of Centrifugation

1) Production of bulk drugs.

2) Production of biological products.

3) Evaluation of suspensions and emulsion.

4) Determination of molecular weight of collides.

5) Separating chalk powder from water.

6) Removing fat from milk to produce skimmed milk.

7) The clarification and stabilization of the wine.

8) Biopharmaceutical analysis of drugs.

9) Use in water treatment.

10) Removing water from lettuce after washing it in a salad spinner.

11) Separating particles from an airflow using cyclonic separation.