

PHARMACEUTICS -1 (BP 103 T)

UNIT: 3

CLASS:4

TOPIC: STABILITY OF SUSPENSIONS**STABILITY OF SUSPENSIONS**

- The physical stability of a pharmaceutical suspension is the condition in which the Particles do not aggregate and in which they remain uniformly distributed throughout The dispersions.

In order to achieve this ideal situation the suspension should have Additive, which are added to achieve ease in resuspension by a moderate amount of Agitation.

Taking a case example; In case of dispersion of positively charged Particles that is flocculated by addition of an anionic electrolyte like monobasic Potassium phosphate. The physical stability of the system is enhanced by addition Of carboxymethylcellulose, Carbopol 934, veegum, tragacanth or bentonite either Alone or in combination.

No physical incompatibility is recorded as majority of Hydrophilic colloids are negatively charged and are compatible with anionic Flocculating agents.

When a flocculated suspension of negatively charged particles With a cationic electrolyte is prepared (aluminum chloride) the addition of Hydrocolloid may result in an incompatible product resulting in stringy mass, which Has no suspending action, and settle rapidly.

In such a condition protective agent is Added to change the sign on the particles from the negative to positive is employed Which can also be achieved by the adsorption onto the particle surface by fatty acid Amine or gelatin.

Thus an anionic electrolyte is used to produce floccules that are compatible with negatively charged suspending agent

An ideal suspension is chemically stable and has particles that do not readily settle or form compact cakes. Suspensions are classified based on use, particle proportion, electrokinetic nature, and particle size.

Key steps in formulation include addition of suspending agents and ensuring uniform particle dispersion.

- Factors contributing to instability of pharmaceutical suspensions include
- caking,
- pH and
- color changes,
- crystal growth,
- microbial growth,
- rapid settling of particles,
- and decrease in drug potency.