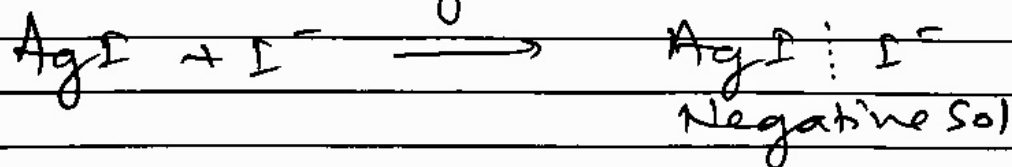


Electro-kinetic or zeta potential.

There are multi theories which explain the formation of charge on the colloidal particles out of these theories preferential adsorption of ions is accepted as best theory, because it explains clearly about charge formation. The preferential adsorption favours to common ion effect. Common ion theory predicts one type of ion of electrolyte is adsorbed by the surface of colloidal particles, it forms a layer on the colloidal particle which is fixed so it is called fixed layer also, later on it attracts the counter ion from the medium and in this way it forms second layer which can move and called 'diffused layer'.

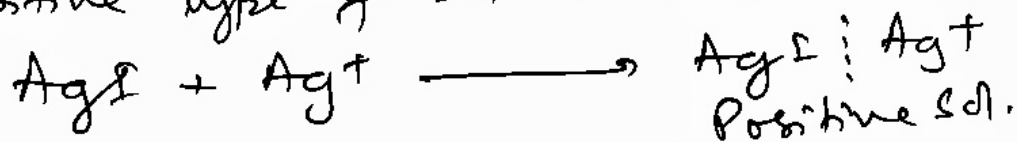
For example: When slightly excess KI solution is added in AgNO_3 solution I^- ion will be adsorbed on the surface of product i.e. AgI particles in this way it creates negative sol.



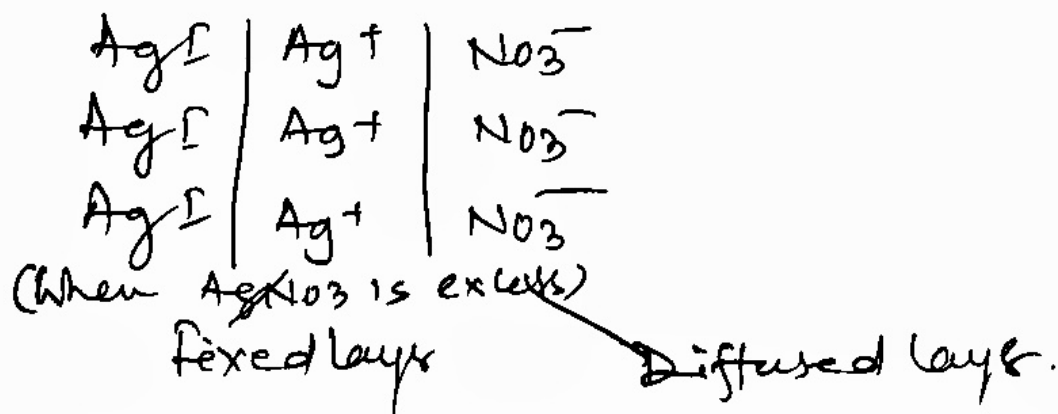
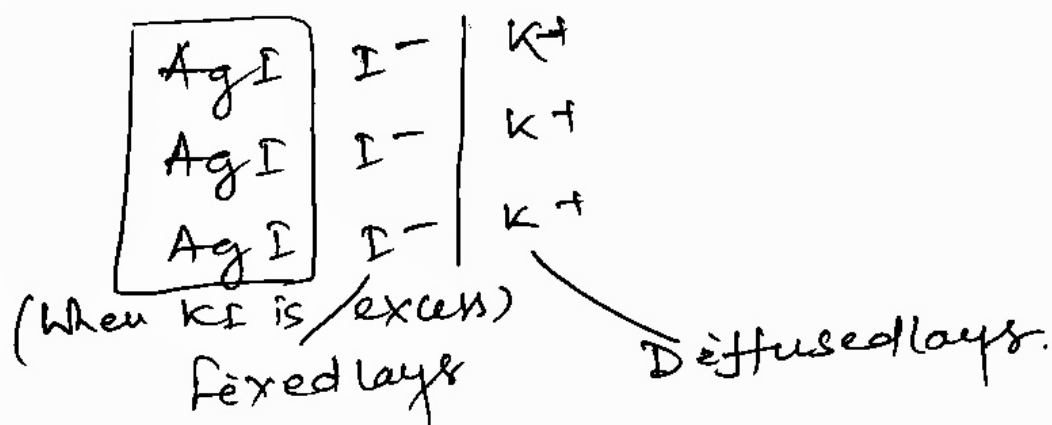
On other side, when slight excess AgNO_3 is added with KI solution, Ag^+ ion will be adsorbed on AgI (as a product) and it gives

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positive type of sol or Positive sol.



In this way the positive ~~type~~ of sol or negative sol act as fixed layer but attraction of counter ions from medium will be diffused layer. In this way two different or opposite charges are formed which is called Helmholtz electrical double layer. As a result a potential difference occurs in between fixed layer & diffused layer, this potential difference is called electrokinetic potential or zeta potential.



Stability of Colloids :->

Stability of Colloid is possible when coagulation is prevented and Brownian movement is also responsible for the stability of colloids because it opposes the force of gravity and it does not allow the colloidal particles to settle down. The stability of Colloid depends on the following factors :-

1. Nature of Colloids : Lyophilic colloids are more stable than lyophobic colloids.
2. Temperature : As temperature increases it favours coagulation and opposes the stability of colloids. Rise in temperature increases kinetic movement due to this sol particles come close to each other against the electrostatic force of ~~attraction~~ repulsions. Due to rise in temp partial dehydration takes place for hydrated colloidal particles which decreases the stabilising influence of hydration. e.g. when milk is heated time to time then ~~fat~~ fat particles are separated and it floats over the surface of milk.
3. Continuous dialysis :-> Colloidal particles are charged and the charge is of same kind. This charge particle is stable due to very less quantity of electrolyte in it, when ever these particles are removed due to

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diagnosis, the value of coagulation increases hence the stability of colloid decreases.

4. Mutual Coagulation: Some colloidal particles are positively charged (i.e. ferric oxide sol) and some are negatively charged (i.e. Arsenic sulphide sol), when these two colloidal solutions are mixed then it neutralises to each other & get coagulated, which opposes the stability of colloids.

4. By electrophoresis: When direct current is passed through colloidal solution opposite then colloidal particles move towards opposite plate (electrodes) and precipitated, hence stability of colloid decreases.

5. By adding excess of electrolyte:- Due to addition of excess ~~colloidal~~ of electrolytes in colloidal solution it gets neutralised & hence it starts coagulation, so opposes the stability of colloids.

~~Stability of colloid decreases~~ →

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