

Stability of sols.

Sols are thermodynamically unstable and the dispersed phase (colloidal particles) tend to separate out on long standing due to the **Vander Waal's attractive forces**. However sols tend to exhibit some stability due to

(1) **Stronger repulsive forces between the similarly charged particles**: All colloidal particles in any sol possess similar charge. Therefore, due to the electrostatic repulsion these are not able to come closer and form aggregates. Thus stronger repulsive forces between the similarly charged particles in a sol promote its stability.

(2) **Particle-solvent interactions**

(i) Due to strong particle-solvent (dispersion medium) interactions, the colloidal particles get strongly solvated.

(ii) Due to solvation, the effective distance between the colloidal particles increases, and therefore, the Vander Waal's force of attraction decreases. As a result, the particles are not able to form aggregates.

(iii) Lyophilic sols are mainly stabilized by solvation effects due to strong interactions between the sol particles and the dispersion medium.