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**:COLLOIDEAL STATE**

**Definition:**

The colloidal state is a particulate phase, in which the particles range in. size from 1.0 nm to 10' nm, dispersed in a continuous phase, the dispersion medium. The extremely large interface between the two phases dictates that on surface energy considerations alone, the colloidal state is thermodynamically unstable.

**Classification**

**A** colloidal system is a biphasic system consisting of:-

(a) Dispersed phase (b) Dispersion phase

**(a) Dispersed phase** :It is just like the solute in a solution. It can be said that the component which is present in smaller proportion is the dispersed phase.For example in a colloidal solution of starch in water starch the Dispersed phase.

**(b) Dispersion phase:** It is just like the solvent in a true solution. It is the component which is present in greater proportion.In the example of colloidal solution of starch in water,water is the dispersed phase.

**Lyophilic and Lyophobic sols**

**Lyophilic sols:**  Colloidal system in which the dispersed phase has the considerable colloids.for the dispersion medium are called lyophilic or solvent loving colloids. Ex: Gelatin,starch,protein,rubber etc.

**Lyophobic sols:** Colloidal system in which the dispersed phase has a little for the dispersion medium are called lyophobic or solvent hating colloids.ex: Metal hydroxide and sulphide solution.

**Difference:**

|  |  |  |  |
| --- | --- | --- | --- |
| s.no. | Property  | Lyophilic sol | Lyophobic sol |
| 1 | Action of electrolysis | A large quantity of electrolyte is needed for precipitation. | Even a small quantity of electrolyte cause precipitation. |
| 2 | Reversibility | Reversible  | Irreversible |
| 3 | Hydration | Particle are heavily hydrated. | The particle are poorly hydrated. |
| 4 | Electrophoresis | May not show | shows |
| 5 | Viscosity | Higher than that of medium | Same as that of medium |