

(c) using a suitable solvent that may desolvate the colloidal particles.

EMULSIONS

Day-7

The liquid-liquid colloidal dispersions are called emulsions. These are dispersions of finely divided liquid droplets in another liquid.

Generally, one of the two liquids is water and the other, which is immiscible with water, is an oil.

Types of Emulsions:

- (i) *Oil-in-Water (O/W) Emulsions:* Here, small droplets of oil are dispersed in water. Examples: milk (fat in water), vanishing cream etc.
- (ii) *Water-in-Oil (W/O) Emulsions:* The dispersion medium is oil where the droplets of oil are dispersed. Example: butter, cold cream.

Preparation Of Emulsions:

Emulsions are prepared by vigorously mixing both the liquids. A small quantity of a third substance called emulsifying agent or emulsifier is to be added to the emulsion to stabilize it. Otherwise, the dispersed particles coalesce together and finally the emulsion breaks up into two separate liquids.

Function of Emulsifiers:

The emulsifying agent forms an interfacial film between the suspended particles and the medium and thus helps the immiscible droplets to disperse into the medium.

Examples of Emulsifying Agents:

- (i) For O/W emulsions: proteins, gums, natural and synthetic soaps, agar etc.
- (ii) For W/O Emulsions: Heavy metal salts of fatty acids, lampblack, long chain alcohols etc.

Separation of Emulsions: The components of an emulsion can be separated by heating, freezing and centrifuging.

Distinction of O/W and W/O Emulsion:

- (i) On addition of water (the medium), if the emulsion is diluted, it indicates that the emulsion is of O/W type.
- (ii) On addition of water, if it makes a separate layer then the emulsion is of W/O type.