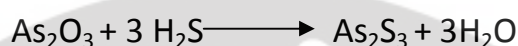


(4) **Double Decomposition-** This method is generally used for the preparation of sols from insoluble salts. A sol of arsenic sulphide is prepared by passing H₂S gas through a dilute solution of arsenious oxide and removing the excess H₂S by boiling .



(5) **Exchange of solvent-** Sols can also be obtained by exchange of solvents . For example , when a concentrated solution of sulphur in alcohol is poured in a large amount of boiling water , the alcohol evaporates leaving being sulphur particles which form nuclei that rapidly grow into a colloidal sol.

PURIFICATION :- Three methods are generally used-

1. **Dialysis:** It has already been stated that while particles in true solution can easily diffuse through parchment and other fine membranes, the colloidal particles, being much larger , cannot do so readily. If a mixture , containing colloidal particles as well as particles in true solution , is placed in a parchment bag which is then held in a wider vessel containing pure water , the substance in true solution pass out while the colloids remain in the bag. The distilled water in the wider vessel is renewed frequently.

The process of separating substance in colloidal state from those present in true solution with the help of fine membrane is known as dialysis.

2. **Electrodialysis:** Ordinarily , the process of dialysis is quite slow but it can be quickened by applying an electric field if the substance in true solution is an electrolyte the process is then called electro dialysis.
3. **Ultrafiltration:** The separation of solutes from colloidal systems can also be carried out by the process known as ultra –filtration. Ordinarily , filter papers have pores larger then 1 micron so that the colloidal particles which can readily pass through along with the ions or molecules in solution. But the pores can be made smaller by soaking the filter paper in a solution of gelatin or colloid ion . the pores thus become very small and the colloidal particles may be retained on the treated filter paper. This process of separating colloids from solute is known as Ultra- filtration.