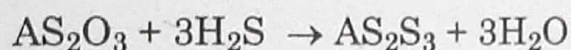


Prepare colloidal solution of arsenious sulphide.

Apparatus & Chemicals: H_2S gas apparatus, beakers, cylinder, glass rod, filter paper As_2O_3 , distilled water etc.

Principle: A colloidal solution is one in which a definite substance is distributed in the form of very small particles as a disperse phase in another substance, the dispersion medium e.g. water. The colloidal particles vary in a size from 10^{-6} to 10^{-8} cm in diameter and can be seen under the influence of ultra microscope. Colloidal solutions are also referred to as sol. If the dispersion medium is water, they are called hydrosols or sometimes aquasols. If alcohol is the dispersion medium; the colloidal solution is called alcosol. The colloidal solution of substance asked for can be prepared according to the following reaction.



Procedure: (i) Boil 1 – 2g of pure As_2O_3 with 200 cm^3 of distilled water for 10 – 15 minutes.

- (ii) Cool the solution to room temperature. Filter the solution to remove excess of As_2O_3 if any, and dilute the volume of the filtrate to 250 cm^3 (crystalline form of As_2O_3 dissolves only very slowly; while the amorphous form dissolves more rapidly).
- (iii) Transfer this solution to a dry clean conical flask and pass a slow current of H_2S gas, washed by bubbling through water into the solution until the latter is saturated.
- (iv) After saturation solution will become yellow turbid. Free the solution from excess of H_2S by means of a stream of H_2 or CO_2 gas through the flask. Alternatively boil the solution to remove excess of H_2S gas (check it with lead acetate paper).
- (v) Cork up the flask and this is the required solution arsenious sulphide.

Precautions: (i) Pass the H_2S gas slowly.

- (ii) Distilled water should be free from cations.
- (iii) H_2S gas should be completely removed.