To Prepare a Colloidal Solution Of Gum

Theory

Starch forms a lyophilic sol when water is used as the dispersion medium. The formation of sol is accelerated by heating. The starch sol can be prepared by heating starch and water at about 100°C. It is quite stable and is not affected by the presence of any electrolytic impurity.

Apparatus

Beakers (250 ml and 50 ml), glass rod, funnel, filter-paper, pestle and mortar, tripod stand, wire-gauze and burner.

Materials Required

Soluble starch (500 mg) and distilled water.

Procedure

1. Take 500 mg of starch in a mortar and add few ml of distilled water.
2. Grind the starch to make a thin paste and transfer this paste to a 50 ml beaker.
3. Take about 100 ml of distilled water in a 250 ml beaker and heat the beaker so that water starts boiling.
4. Pour the paste slowly with stirring into boiling water in the beaker (Fig. 2.1).
5. Continue boiling for about 10 minutes and there allow the beaker to cool.

6. Filter the contents of the beaker through a filter-paper, fixed in a funnel. Label the filtrate ‘Starch Sol’.

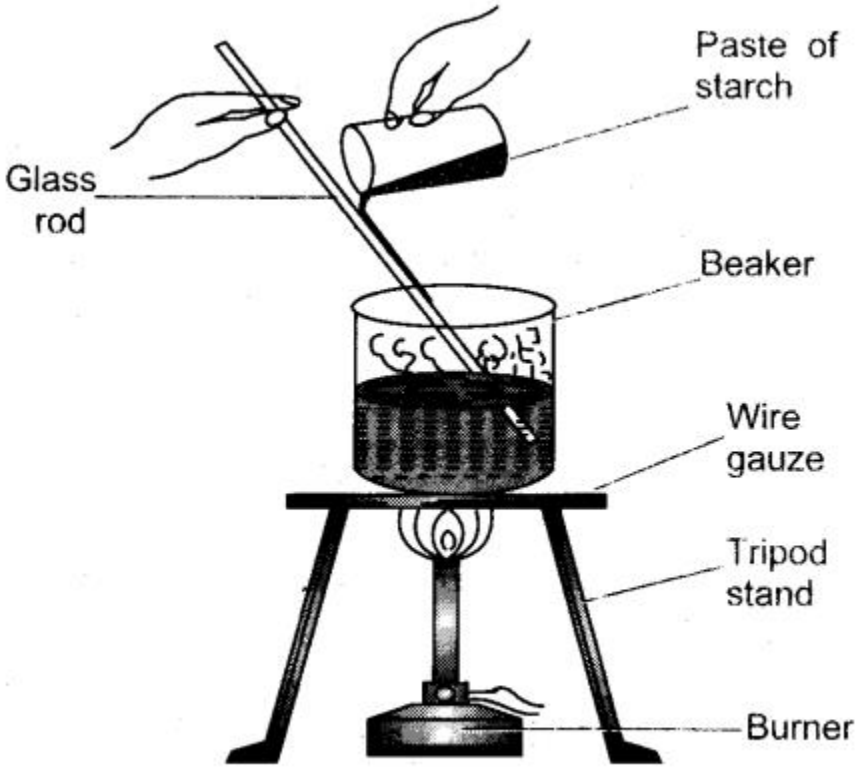

Fig. Preparation of starch sol.

Precautions

1. The apparatus used for preparing sol should be properly cleaned.
2. Distilled water should be used for preparing sols in water.
3. Starch should be converted into a fine paste before adding to boiling water.
4. Starch paste should be added in a thin stream to boiling water.
5. Constant stirring of the contents is necessary during the preparation of the sol.

NOTE: This experiment can be performed in a similar way as explained in To Prepare Colloidal Solution (sol) of Starch with the exception that instead of boiling water, warm water is to be used since gum is quite soluble in warm water.