

Name of Subject: Chemistry

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Class: BSc (Hons.)

Paper: I

Group: A

Topic: Hydrogen Peroxide

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Department: Chemistry

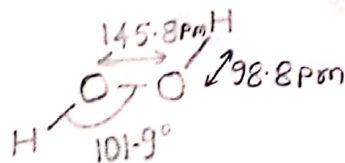
College: Dr. L.K.V.D. College, Tarpur

What is Hydrogen Peroxide (H_2O_2)

Hydrogen Peroxide is the simplest kind of peroxide available (oxygen-oxygen single bond). It is a colorless liquid and is

used in aqueous solution for safety reasons. It acts as a bleaching agent and is also used as a disinfectant.

Concentrated hydrogen peroxide is a very reactive oxygen species and is used as a propellant in rocketry. The chemical formula for hydrogen peroxide is H_2O_2 .

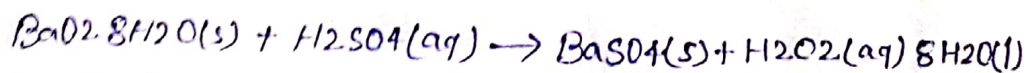


Hydrogen Peroxide Structure

Preparation of Hydrogen Peroxide

Laboratory Methods of Preparation

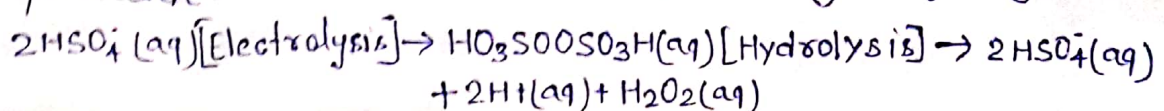
When barium peroxide is acidified and the excess water is removed by the process of evaporation under reduced pressure, we obtain hydrogen peroxide.



Industrial Method of Preparation

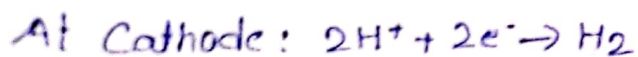
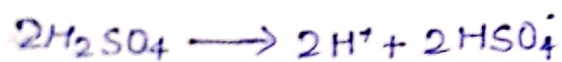
Hydrogen peroxide is prepared by the electrolysis of 30% ice-cold H_2SO_4 . When acidified sulfate solution is electrolyzed at high current density, peroxodisulphate is obtained.

Peroxodisulphate is then hydrolyzed to get hydrogen peroxide.

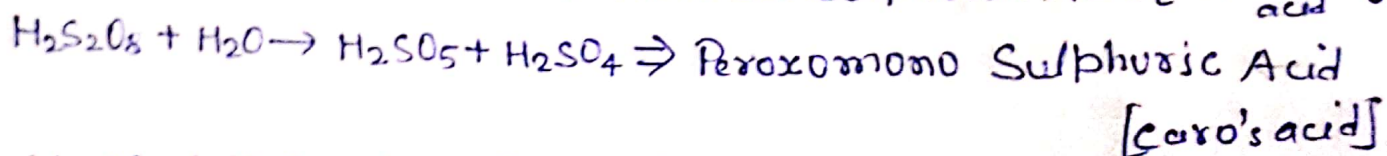
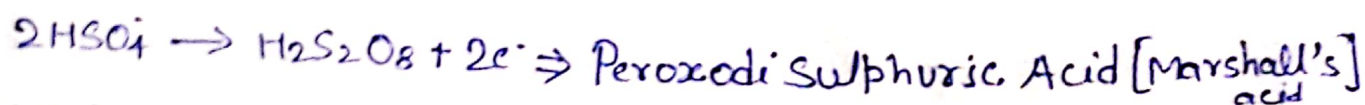


Reaction Mechanism

- Electrolyte: 30% dilute H_2SO_4
- Cathode: Pb wire
- Anode: Pt rod

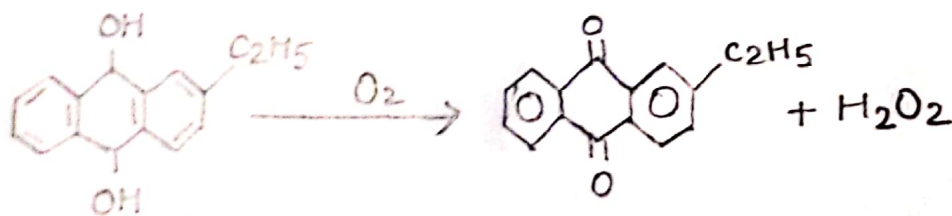


At Anode



Commercial Methods of Preparation

Auto-oxidation Method:



2-ethyl Anthraquinol

2-ethyl Anthraquinone

Auto-oxidation Method of Preparation of H_2O_2

HPSingh