C H A P T E R - V

IDENTIFICATION OF THE OXIDATION PRODUCTS

A knowledge of the products formed in a reaction subjected to kinetic study is an important step in the elucidation of the mechanism of the reaction.

The reaction mixture, after keeping for 24 hours, was treated with potassium chloride to precipitate out the Ag^+ ion. The solution was filtered. The solution was heated to destroy any persulphate remained in the solution. The solution was further concentrated and the tests were performed as follows :

Test for Ammonia :

Test with P-nitrobenzenediazonium chloride :

A good sensitive test for ammonia depends on the red coloration with P-nitrobenzenediazonium chloride(I), when it is shaken with a solution containing an ammonium salt and 10% sodium hydroxide added drop by drop. A coloured ammonium salt of P-nitrophenylnitrosoamine(II) is formed.

Procedure :

A drop of slightly acid or neutral test solution is placed on the spot plate followed by a drop of Reigler's reagent. Then a particle of calcium oxide is added. In the presence of ammonia salts, a red zone forms at once around calcium oxide. In the absence of ammonium salts, any reaction is slow. For very small amounts, a blank test should be carried out on a drop of water.

Thus the first oxidation product was ammonia and the another was formaldehyde. Test for formaldehyde :

1) Aqueous solution + Tollen's reagent or Fehling's solutuon ——→ gray/black or red ppt. shows the presence of formaldehyde.
2) Aquous solution + resorcinol + Conc. $H_2S\ O_4$ ——→ red layer at the junction of two liquids. White ppt. changes to violet red in the aqueous layer. The above tests were carried out according to Feigl.[189].

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