EXPERIMENT NO -23

OBJECT: To prepare and standardize 200 ml of 0.1 M of silver nitrate solution.

REFERENCE

Parle A., "Pharmaceutical chemistry I Laboratory Mannual", CBS Publishers and distributors Pvt. Ltd, Ed Ist, 2008, pp 117-118.

REQUIREMENTS

Chemical required: Silver nitrate, sodium chloride, acetic acid ,methanol, eosin solution.

Apparatus required: conical flask, burette, pipette, beaker, etc.

THEORY

Mohr method of determination of chlorides by titration with silver nitrate is one of the oldest titration methods still in use - it was researched and published by Karl Friedrich Mohr in 1856. The idea behind is very simple - chlorides are titrated with the silver nitrate solution in the presence of chromate anions. End point is signalled by the appearance of the red silver chromate. Intense yellow colour of chromate may make detection of first signs of formation of red silver chromate precipitation difficult. As some excess of silver must be added before precipitate starts to form, if concentration of titrant is below 0.1M, we may expect singificant positive error. To correct for this error we can determine a blank, titrating a solution of the indicator potassium chromate with standard silver nitrate solution. To make result more realistic we can add small amount of chloride free calcium carbonate to the solution to imitate the white silver precipitate.

PROCEDURE

Dissolve 2.75 g of ceric ammonium nitrate in 1 N nitric acid to obtain 100 ml of solution, and filter. Standardize the solution as follows.

Accurately measure 10 ml of freshly standardized 0.1 N ferrous ammonium sulfate VS into a flask, and dilute with water to about 100 ml. Add 1 drop of nitrophenanthroline TS, and titrate with the ceric ammonium nitrate solution to a colorless endpoint.

RESULT:

The exact molarity of the prepared silver nitrate solution is M.