

EXPERIMENT NO-4

OBJECT: - To perform the limit test for chloride in a given sample of tap water.

REFERENCE: 1. Parle A., "Pharmaceutical Chemistry 1 Laboratory Manual", CBS Publishers and Distributors Pvt. Ltd., Ed 1st, 2008, pp 59.

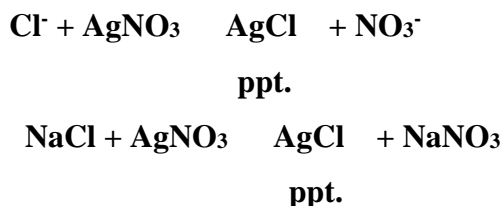
REQUIREMENTS: -

Chemical required: Silver nitrate, dilute nitric acid, sodium chloride, etc.

Apparatus required: - Measuring cylinder, glass rod, and Nessler's cylinder.

THEORY

Limit tests are quantitative or semi-quantitative test designed to identify and control a small number of impurities which are likely to be present in the substance. This test involves the reaction of silver nitrate with soluble chloride to form the ppt. of silver chloride which is insoluble in dilute HNO₃. The extent of the precipitation depends upon the amount of silver chloride formed i.e. on the number of chloride ions present in the substance. The opalescence produced in the test solution is compared with a reference/standard solution under the same experimental conditions.



PROCEDURE

STANDARD - 1mL of 0.05845% w/v solution of NaCl is taken in Nessler's cylinder Add 10 mL of Dil. HNO₃ Make up the volume up to 50 ml with distilled water. Now add 1mL of silver nitrate to this solution. Stirrer the solution with glass road and allow to stand for 5 minutes.

TEST

Dissolve a specified quantity of substances as per I.P. monograph in 10mL of distilled water. Add 10 mL of Dil. Nitric acid. Make up the volume up to 50 mL with tap water. Now add 1mL of silver nitrate to this solution. Stirrer the solution with glass road and allow to stand for 5 minutes.

OBSERVATION

The opalescence of the test solution is less/more than the standard solution. If the opalescence of the test solution has been less than the standard opalescence, the sample will pass the limit test.

RESULT

A limit test for chloride was performed.