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Aim :

Determination of vitamin C in the given sample tablet.

Reference :

Requirement :

- **Apparatus :-** Burette, Burette stand, measuring cylinder, funnel, beaker, glass rod, Conical flask, dropper, weighing machine, spatula, mortar and pestle, volumetric flask.

- **Chemicals :-**
  - Potassium Iodide,
  - Iodine,
  - Arsenic trioxide
  - Sodium hydroxide
  - Sodium bicarbonate
  - HCl
  - Soluble starch
  - Methyl orange (indicator)
  - H_2SO_4
  - Ascorbic acid (vitamin C).

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Theory:

Vitamin C is a water-soluble vitamin found in citrus and other fruits and vegetables, and also ~~solid~~ sold as a dietary supplement. It is used to prevent and treat scurvy. Vitamin C is an essential nutrient involved in the repair of tissue, the formation of collagen, and the enzymatic production of certain neurotransmitters.

Procedure:

i) Reagent Preparation

i) 0.05 M iodine solution

Weight 18 g of potassium iodide into 100 ml of beaker and weight 7 gm of iodine into some beaker then add a few ml of distilled water and stir for a few minutes until it dissolve iodine.

Transfer iodine solution to a 1 litre volumetric flask. Make a solution upto 500 ml with distilled water.

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ii) Preparation of starch indicator (0.5%)

Weigh 0.25 gm of soluble starch and add 50 ml of boiling water in a 100 ml of conical flask. Stir to dissolve them and cooled before using.

iii) Standardization of 0.5 M iodine solution.

Weigh accurately about 0.15 gm of Arsenic trioxide (previously dried at 105° c for 1 hr.) and dissolve in 20 ml of 1ml sodium hydroxide solution and dilute with 40 ml of water. Add 2 drops of methyl orange solution.

Dilute with HCl solution until the yellow colour change into pink colour.

Add 2 gm of sodium bicarbonate.

Dilute with 50 ml of water.

Add 3 ml of starch solution (indicator).

Slowly titrate with iodine solution until permanent blue colour occur.

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iv) Determination of Ascorbic acid.

Weight accurately about 0.1 gm and dissolve in mixture of 100 ml of freshly boiled and cooled water.

Add 50 ml of dilute sulphuric acid.

Immediately titrate with 0.05 M iodine solution using starch indicator.

Results:

Determination of vitamin c was successfully performed in laboratory.

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