GARVIT SHAH
F-24

EXPERIMENT: No. 5

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Date

- **Aim:** To titrimetrically determine l-Ascorbic acid (Vitamin C)

- **Reagents:** Freshly boiled & cooled water, 0.1N Iodine soln, 1N sulfuric acid, 1% Starch soln.

- **Procedure:**

BLANK ESTIMATION -
Take blank solution & titrate against 0.1N I_2 soln. End pt. marked by appearance of blue color. Let the volume of titrant consumed be B.

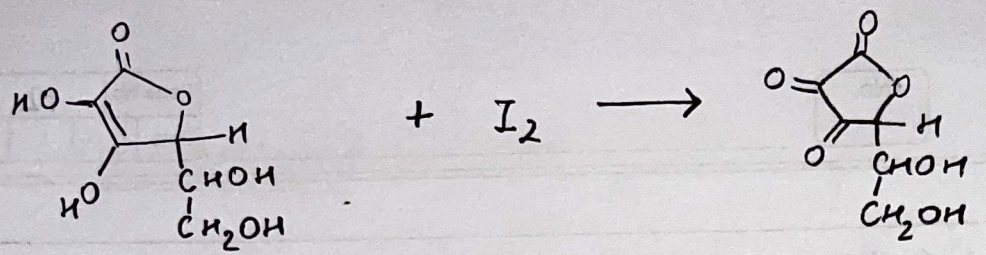
ACTUAL ESTIMATION -
Dissolve the given sample (120g of Ascorbic acid) in 50mL of freshly boiled & cooled water. Then, add 10mL of 1N sulfuric acid, and 3mL of 1% starch soln. Titrate against 0.1N I_2 soln until a persistent blue color is obtained. Let the volume of titrant consumed be V. Then, calculate the percentage of ascorbic acid in the given sample.

- **Result:**

Percentage purity of given sample of l-Ascorbic acid = $\frac{D}{120} \times 100 = 73.33\%$

Sundaram

Teacher's Sign. :



l-Ascorbic acid → l-dehydroxy ascorbic acid

- $I_2 + C_6H_8O_6 \longrightarrow C_6H_6O_6 + 2H^+ + 2I^-$
  (Vitamic C) (oxidized Vitamin C)
- I_2 + Starch → Iodine Starch Complex (blue color)

Observation :

Used sample = 120 mg Ascorbic acid

BLANK				ACTUAL			
Burette : 0.1N I_2 soln				Burette : 0.1N I_2 soln			
Pipette : 10mL 1N H_2SO_4 soln + 50mL (Freshly boiled & cooled water)				Pipette : Weigh Sample + 50mL freshly boiled & cooled H_2O + 10mL 1N H_2SO_4			
Indicator : 1% Starch soln (¼ TT)				Indicator : 1% Starch soln (¼ TT)			
Endpt : Appearance of blue color				End pt : Appearance of blue color			
Concurrent Burette Reading = A mL				Concurrent Burette Reading = B mL			
IBR	FBR	Diff	Concurrent	IBR	FBR	Diff	Concurrent
0	0.1	0.1		0	10	10	
0	0.1	0.1	0.1	0	10.1	10.1	10.1
0	0.1	0.1		0	10.1	10.1	
0	0.1	0.1		0	10.1	10.1	

CALCULATION :

1000mL 1N I_2 soln = 88g l-ascorbic acid

1mL 0.1N I_2 soln = 8.8mg "

(B-A) mL 0.1N I_2 soln = 8.8 × (B-A) mg l-ascorbic acid

D : 88mg of l-ascorbic acid

Now % purity of l-ascorbic acid = $\frac{100 \times D}{\text{Wt sample}}$ = 73.33%