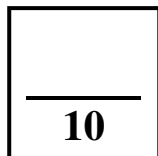


## Science 9-Biology

### Experiment 6-4—Testing for Vitamin C



Name \_\_\_\_\_

Due Date \_\_\_\_\_

Show Me  Hand In *Correct and Hand In Again By* \_\_\_\_\_

**Purpose:** To test some foods for the presence Vitamin C

**Materials:**

- Small dropper
- Graduated Cylinder or Burette for Indophenol Solution
- 125 mL Erlenmeyer Flask
- 100 mL Beaker
- 0.1% Indophenol Solution
- Ascorbic Acid Solution
- Five juices or drinks

**Background:**

### Positive Test for Vitamin C

**When a liquid containing Vitamin C is added to **Indophenol Solution**, the colour changes from **Blue** to **Clear**.**

**The more drops of liquid it takes to change the colour, the **LESS** the amount of Vitamin C there is in the liquid.**

## Testing Liquids for Relative Amount of Vitamin C

1. Using a burette, add 5 mL of Indophenol Solution to a clean 125 mL Erlenmeyer Flask. (Your teacher can help you with this)
2. Add a small sample of Orange Juice to a 100 mL beaker. Your teacher can help you with this. Put a clean small dropper into the beaker.
3. **READ THIS WHOLE STEP!** Using your dropper, **SLOWLY** add Orange Juice, drop by drop to the flask with the Indophenol Solution and swirl it. **COUNT THE NUMBER OF DROPS** of the Orange Juice it takes to make the Indophenol Solution turn **CLEAR**. Record the number of drops in the Data Table on **Page 4**.
4. Pour the contents of the flask and the beaker down the sink and rinse them both out well.
5. Clean out the dropper and the bulb! Your teacher will show you how to do this.
  
6. Using a burette, add 5 mL of Indophenol Solution to a clean 125 mL Erlenmeyer Flask. (Your teacher can help you with this)
7. Add a small sample of Grapefruit Juice to a 100 mL beaker. Your teacher can help you with this. Put a clean small dropper into the beaker.
8. **READ THIS WHOLE STEP!** Using your dropper, **SLOWLY** add Grapefruit Juice, drop by drop to the flask with the Indophenol Solution and swirl it. **COUNT THE NUMBER OF DROPS** of the Grapefruit Juice it takes to make the Indophenol Solution turn **CLEAR**. Record the number of drops in the Data Table on **Page 4**.
9. Pour the contents of the flask and the beaker down the sink and rinse them both out well.
10. Clean out the dropper and the bulb!
  
11. Using a burette, add 5 mL of Indophenol Solution to a clean 125 mL Erlenmeyer Flask. (Your teacher can help you with this)
12. Add a small sample of Gatorade to a 100 mL beaker. Your teacher can help you with this. Put a clean small dropper into the beaker.
13. **READ THIS WHOLE STEP!** Using your dropper, **SLOWLY** add Gatorade, drop by drop to the flask with the Indophenol Solution and swirl it. **COUNT THE NUMBER OF DROPS** of the Gatorade Juice it takes to make the Indophenol Solution turn **CLEAR**. Record the number of drops in the Data Table on **Page 4**. If it doesn't turn clear after 50 drops, just put "> 50" in the Data Table under "Number of Drops..."
14. Pour the contents of the flask and the beaker down the sink and rinse them both out well.
15. Clean out the dropper and the bulb!

16. Using a burette, add 5 mL of Indophenol Solution to a clean 125 mL Erlenmeyer Flask. (Your teacher can help you with this)
17. Add a small sample of Apple Juice to a 100 mL beaker. Your teacher can help you with this. Put a clean small dropper into the beaker.
18. **READ THIS WHOLE STEP!** Using your dropper, **SLOWLY** add Apple Juice, drop by drop to the flask with the Indophenol Solution and swirl it. **COUNT THE NUMBER OF DROPS** of the Apple Juice it takes to make the Indophenol Solution turn **CLEAR**. Record the number of drops in the Data Table on **Page 4**.
19. Pour the contents of the flask and the beaker down the sink and rinse them both out well.
20. Clean out the dropper and the bulb!
  
21. Using a burette, add 5 mL of Indophenol Solution to a clean 125 mL Erlenmeyer Flask. (Your teacher can help you with this)
22. Add a small sample of Pineapple Juice to a 100 mL beaker. Your teacher can help you with this. Put a clean small dropper into the beaker.
23. **READ THIS WHOLE STEP!** Using your dropper, **SLOWLY** add Pineapple Juice, drop by drop to the flask with the Indophenol Solution and swirl it. **COUNT THE NUMBER OF DROPS** of the Pineapple Juice it takes to make the Indophenol Solution turn **CLEAR**. Record the number of drops in the Data Table on **Page 4**.
24. Pour the contents of the flask and the beaker down the sink and rinse them both out well.
25. Clean out the dropper and the bulb!
  
26. Using a burette, add 5 mL of Indophenol Solution to a clean 125 mL Erlenmeyer Flask. (Your teacher can help you with this)
27. Add a small sample of Ascorbic Acid Solution to a 100 mL beaker. Your teacher can help you with this. Put a clean small dropper into the beaker.
28. **READ THIS WHOLE STEP!** Using your dropper, **SLOWLY** add Ascorbic Acid Solution, drop by drop to the flask with the Indophenol Solution and swirl it. **COUNT THE NUMBER OF DROPS** of the Ascorbic Acid Solution it takes to make the Indophenol Solution turn **CLEAR**. Record the number of drops in the Data Table on **Page 4**.
29. Pour the contents of the flask and the beaker down the sink and rinse them both out well.
30. Clean out the dropper and the bulb!
31. Place the flask, dropper and beaker in the place designated by the teacher.
32. Clean up your lab station and wash your hands.

**Observations:**

Sample #	Name of Sample	Number of Drops to Change From Blue to Clear
1	Orange Juice	
2	Grapefruit Juice	
3	Gatorade	
4	Apple Juice	
5	Pineapple Juice	
6	Ascorbic Acid Solution	

**Questions:**

- Which juice, drink or solution appeared to have the **highest content** of **Vitamin C** (took the least number of drops to change the colour to clear)?  
\_\_\_\_\_
- Was there any juice or drink tested that contained **no detectable Vitamin C** (Still didn't go clear after 50 drops were added.)? \_\_\_\_\_  
If so, name the sample(s) \_\_\_\_\_
- Describe a **positive test** for the presence of **Vitamin C** in a liquid. Outline the **procedure** and the **result** for a **positive** test. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. How can you tell the **relative amounts** of **Vitamin C** in several samples using this test?

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5. What are the **main functions** of **Vitamin C** in the body? \_\_\_\_\_

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6. What **condition** results from a severe lack of **Vitamin C** in the diet? \_\_\_\_\_

7. Draw a picture of a food which is high in Vitamin C content:

