

Citric Acid in Soda Titration Lab Report Peer Grading Rubric

Whose lab report are you grading? _____

Grader's Name _____ Date _____ Period _____

***Take off at least one point for each box that is not checked in the table below.

<u>Requirements</u>	<u>Earned Points</u>	<u>Possible Points</u>	<u>Comments</u>
Heading <ul style="list-style-type: none"> <input type="checkbox"/> Date of experiment <input type="checkbox"/> Lab partner(s) <input type="checkbox"/> Experiment Title 		3	
Pre-lab <ul style="list-style-type: none"> <input type="checkbox"/> Purpose Background Knowledge <ul style="list-style-type: none"> <input type="checkbox"/> 1. $\text{H}_3\text{C}_6\text{H}_5\text{O}_7(\text{aq}) + 3 \text{NaOH}(\text{aq}) \rightarrow 3 \text{H}_2\text{O}(\text{l}) + \text{Na}_3\text{C}_6\text{H}_5\text{O}_7(\text{aq})$ <input type="checkbox"/> 2. 192.14 g/mol <input type="checkbox"/> 3. 0.083 M Procedure <ul style="list-style-type: none"> <input type="checkbox"/> Safety <input type="checkbox"/> Protocol detailed enough to follow 		6	
Data <ul style="list-style-type: none"> <input type="checkbox"/> Burette reading data table (w/o title -1/2 pt) <input type="checkbox"/> Average volume of NaOH recorded <input type="checkbox"/> Class Data Table (w/o title -1/2 point) <input type="checkbox"/> All quantities include appropriate units <input type="checkbox"/> Neat and Organized 		5	
Observations <ul style="list-style-type: none"> <input type="checkbox"/> 2-3 complete sentences <input type="checkbox"/> Clearly describes that solution color changes with the addition of base <input type="checkbox"/> Correct spelling and grammar 		3	

Data Processing

1. Titration equation

- Formula in words ($X_A M_A V_A = X_B M_B V_B$)

Sprite

- Substitution, Boxed answer with M units (2 points)

7-UP

- Substitution, Boxed answer with M units (2 points)

Squirt

- Substitution, Boxed answer with M units (2 points)

2. Molarity of citric acid in 10 mL sample

- Formula in words (Molarity = moles/L)

- Substitution, Boxed answer with M units (2 points)

- Substitution, Boxed answer with M units (2 points)

3. Moles of citric acid in a 2L bottle

- Formula in words (Molarity = moles/L)

Sprite

- Substitution, Boxed answer with mol units (2 points)

7-UP

- Substitution, Boxed answer with mol units (2 points)

Squirt

- Substitution, Boxed answer with mol units (2 points)

4. Grams of citric acid in a 2L bottle

Sprite

- Shows all work, Boxed answer with g units (2 points)

7-UP

- Shows all work, Boxed answer with g units (2 points)

Squirt

- Shows all work, Boxed answer with g units (2 points)

- All answers between 2-9 g

- All calculations are clearly labeled and easy to understand

25

Discussion Questions <ul style="list-style-type: none"> <input type="checkbox"/> 1. Sprite, 7-UP, Squirt <input type="checkbox"/> 2. Degas to remove carbonic acid in bubbles <input type="checkbox"/> 3. Acid can destroy tooth enamel <input type="checkbox"/> Complete Sentences <input type="checkbox"/> Correct spelling and grammar 		5	
Conclusion and Evaluation <ul style="list-style-type: none"> <input type="checkbox"/> Complete sentences <input type="checkbox"/> Correct spelling and grammar Paragraph 1: <ul style="list-style-type: none"> <input type="checkbox"/> Appropriate topic sentence <input type="checkbox"/> Includes significant quantitative data <input type="checkbox"/> Inference from background info and data <input type="checkbox"/> What did he/she learn? Paragraph 2: <ul style="list-style-type: none"> <input type="checkbox"/> Limitations or sources of error <input type="checkbox"/> How would errors affect the results? (Be specific!) <input type="checkbox"/> How can results be improved? (Reasonable suggestions) <input type="checkbox"/> Suggestions for further experiments 		10	
Presentation <ul style="list-style-type: none"> <input type="checkbox"/> Well-organized, sections clearly labeled <input type="checkbox"/> Neat, legible writing <input type="checkbox"/> Table of contents includes information <input type="checkbox"/> Page numbers included <input type="checkbox"/> Lab is written in ink <input type="checkbox"/> Errors properly crossed out, no white out <input type="checkbox"/> Writes on one side of the page only 		3	

Total points earned: _____ / 60

***Don't forget to record the score in the Table of Contents!

Write two things the student did well in this lab report:

-
-

Write two things that the student could do to improve the lab report:

-
-