15 Ka of a Weak Acid (1706165)

Question	1	2	3	4	5	6	7	8

Description

Determine the K_a of vinegar (acetic acid) by experimentation. Determine your procedure and write it in your notes to be approved by the instructor before starting the experiment.

Instructions

Use the following equipment: an unknown concentration of acetic acid, an unknown concentration of NaOH, buret, 250 mL flask, 250 mL beaker, 50mL graduated cylinder, disposable pipette, phenolphthalein, pH probe, ring stand, electrode support clamp, logger lite, pH 4 buffer, pH 10 buffer.

The pH meter must be calibrated using the buffer solutions.

To calibrate the pH meter, connect the probe to the quick link and then to the computer. Open Logger Lite. Using the Experiment menu, choose Calibrate. Click Calibrate Now. Place the probe in the pH 4.0 Buffer and allow it to stabilize for at least one minute. Click Keep. Rinse the probe and place it in the pH 10.0 buffer and allow it to stabilize for at least one minute. Click Keep. Rinse the probe with distilled water. Now you are ready to use the probe.

- -

1.   Question Details   Lab Partners [1837468]   _

Enter the name(s) of your lab partner(s). (If you worked by yourself, enter "none").

- -

2.   Question Details   Objective and procedure summary [3413760]   _

Restate the objective in your own words using complete sentences. Summarize the steps in your procedure. (Be sure and include any safety concerns).

- -

3.   Question Details   Upload Lab Photo [3413757]   _

Upload a photo of the lab apparatus with your face in the photo as you perform some part of the lab. Title the image with a unique file name before you upload it.(Maybe use your initials and part of the lab title) [Choose File] no file selected   It must be less than 5 MB in size.

---

4.   Question Details   Half Titration Data [1714462]

a. Enter the pH of the solution (from your experiment):

4.0 ✓ [   ]

Submit question a. before proceeding. The answer to question a. must be correct before the other questions can be properly evaluated.

b. Calculate pK_a for the acid. **4.0** ✓ [   ]

c. Calculate K_a for the acid. **4.0** ✓ [   ]

d. Calculate the percent of error using the accepted value of $K_a = 1.8e\text{-}5$. (Use the unrounded value from question c.)

4.0 ✓ [   ] %

---

5.   Question Details   Half Titration Lab 2 [1714612]

Explain why the pH of your lab solution solution is equal to the pK_a of the acid.

[   ]

---

6.   Question Details   Error discussion [3413763]

What are some specific sources of error, and how do they influence the data? Which measurement was the least precise? Does the error make the final value obtained larger or smaller than it should be (give at least one example and trace the steps)? If your calculated percent errors are significant, you must propose valid explanations here.
Instrumental error and human error exist in all experiments, and should not be mentioned as a source of error unless they caused a significant fault. Significant digits and mistakes in calculations are NOT a valid source of error. In writing this section it is sometimes helpful to ask yourself what you would do differently if you were to repeat the experiment and wanted to obtain better precision and accuracy. Use complete sentences.

[   ]

---

7.   Question Details   Upload Calculations (Show Work) [3418656]

Upload a photo of your calculations, showing your work. Make sure your name and the date are written on the page. Title the image with a unique file name before you upload it.(Maybe use your initials and part of the lab title and the word Calcs)

[Choose File] no file selected

---

8.   Question Details   Observations, Skills utilized and learning [3413764]

What observations did you make during the lab? What chemistry concepts, laws, and/or skills were necessary to complete this lab? What did you learn or re-learn? Use complete sentences.

Assignment Details

Name (AID): **15 Ka of a Weak Acid (1706165)**
Submissions Allowed: **5**
Category: **Lab**
Code:
Locked: **Yes**
Author: **Ryan, Matt (** mryan@allsaintsschool.org **)**
Last Saved: **Feb 22, 2018 06:24 PM CST**
Permission: **Protected**
Randomization: **Person**
Which graded: **Last**

Feedback Settings
Before due date
Question Score
Assignment Score
Publish Essay Scores
Question Part Score
Mark
Help/Hints
Response
Save Work
After due date
Question Score
Assignment Score
Publish Essay Scores
Key
Question Part Score
Solution
Mark
Add Practice Button
Help/Hints
Response