The ValleyVintner™

4435 First Street, #113, Livermore, CA 94551

Using a pH Meter in Titration to Measure TA.

Please read these instructions before using this equipment.

"Caution Sodium Hydroxide is Hazardous"! Avoid all skin contact, if contact occurs rinse with water. If eye contact, wash with cool water for 15 minutes and seek medical attention. If swallowed contact your poison control center immediately.

Keep Out Of Reach Of Children!!!

Never touch the electrode of your pH Meter!

1.) A pH meter is a sensitive analog tool. The electrode is filled with electrolyte that must be rejuvenated before use to assure an accurate reading. Always calibrate your pH meter before using.

Before using your pH meter it is necessary to soak the electrode for a minimum of 2 hours in pH Storage Solution followed by a rinse (water) and minimum soak of 30 minutes with it's switch "ON" in buffer solution 7.01 pH. Then calibrate at the high end of your range for this test (7.01 pH is recommended). pH meters are most accurate at or near their calibration points. Rinse before and after measuring your sample. Shake or blow on your pH meter to dry the electrode and remove all excess water.

Always store your electrode in storage solution by filling the cap with a few drops and securing it over the electrode.

Rinse electrode after every measurement, shake or blow on electrode to remove excess water. "DO NOT TOUCH" electrode!

If your pH meter has been idle for an extended period repeat the rejuvenating step listed above.

2.) Fill your Wash Bottle with distilled or DI water. You will use this to rinse your burette, syringe, beaker, everything so it's best to start with it full.

3.) Set up your Titration stand by bolting the steel rod to white base.

4.) Attach your dual burette holder to the titration stand, and insert your burette in the holder by squeezing open the holder. Adjust the burette height so that is just above your 250 flask (sample).

5.) Close the valve (stopcock) of your burette before filling, the valve should be horizontal to close.

6.) Use your pipette to draw 15cc sample of wine (must) and place in 250 ml Flask or 50 ml Beaker. To draw a sample into the pipette, apply a vacuum (you may gently suck on the red end) to the end of the pipette when inserted in your sample. "Do Not Use This Pipette to sample the .2N Sodium Hydroxide".

7.) Draw 20 cc of water into your pipette and add it your sample.

8.) Fill the syringe with 15-20 cc of .2N Sodium Hydroxide and gently squeeze the solution into the top of your "Closed" burette. "Caution Sodium Hydroxide is Hazardous". Avoid all skin contact, if contact occurs wash with water. For eye contact wash with cool water for 15 minutes and seek medical attention. If swallowed contact your poison control center immediately.

9.) Place an empty container under the burette (not your wine sample) and slowly open the burette valve (stopcock) and allow 1-2 ml's of solution to escape and fill the burette spout. Close the valve.

10.) Record the amount of solution in your burette. You will subtract the amount used from this number to determine your TA.

11.) Measure the pH of your sample with your pH meter and place your wine sample (flask) under the burette.

12.) With one hand on your wine sample and the other on the burette valve, gently swirl the sample while "SLOWLY" adding sodium hydroxide.

13.) Stop frequently and measure your pH with your meter. With practice you will be able to hold your pH meter in your sample while swirling and adding sodium hydroxide.

14.) Titrate until your pH reads 8.2. Slow down as your pH approaches 8. It is easy to over shoot your target.

15.) Record the ending solution level in your burette once you've achieved a pH of 8.2 in your sample.

16.) Subtract the recorded starting solution level from the ending solution level to determine your TA. Your TA equals .1 times the amount of .2N Sodium Hydroxide use to reach a pH of 8.2 in your sample. If you used 5 ml of solution to reach a pH of 8.2 your TA is .5g/L.

17.) After testing, place your sodium hydroxide container under the burette and pour the balance (if any) back into the container for later use.

Clean up – place an empty container under the burette and fill the burette with water from your wash bottle. Then open the valve and repeat until clean. Be certain to rinse your syringe and all containers as well. Best Wishes on a Successful Project!