

Calibrate the pH meter using pH standards of 4 and 7.

Titrateable Acidity (TA) by pH measurement

PROCEDURES

1) Prepare the following solution in a 250 beaker

- Transfer 5.00ml of wine to the beaker using a volumetric pipette
- Add 100ml of distilled water using a graduated cylinder

2) Perform an initial trial to estimate how much NaOH is required to approach a pH of 8.2

- Place the beaker on a stir plate stir using a small magnetic stir bar. Set the stir setting to low.
- Place the pH probe into the solution so the bulb is about a half cm from the bottom, close to the inner wall of the beaker. Use a clamp to stabilize the probe.
- Using a 25 mL burette, add 0.10M NaOH in 2 mL increments to the solution allowing the pH reading to stabilize after each 2mL addition until the pH reaches about 8.2.

Remember to record the initial and final volumes.

3) Titrating the wine with accuracy

- Place the beaker on a stir plate stir using a small magnetic stir bar. Set the stir setting to low.
- Place the pH probe into the solution so the bulb is about a half cm from the bottom, close to the inner wall of the beaker. Use a clamp to stabilize the probe.
- Using your experience from the previous titration, *carefully* add the NaOH until the pH is 8.2. Allow the pH reading to stabilize after each addition of NaOH.

Remember to record the initial and final volumes.

CALCULATION

- Use the following equation to determine the TA in the wine:

$$TA \text{ (g/100mL)} = (V_{\text{NaOH}})(\text{Conc}) (1.5)$$

V_{NaOH} : volume of NaOH used

Conc: molar concentration of NaOH

Name _____

CHM130 Lab

Titration Acidity

Two trials for each	V_i	V_f	V_{total}	TA
White – T1				
White – T2				
Red – T1				
Red – T2				

Each student – Using Google Docs, create and share with me a spreadsheet titled, CHM130VV-TA your FULL NAME. Reproduce the above table in a sheet labeled “TA by pH”. Use the spreadsheet to carry out all calculations. Do not simply type the numbers into the cells.

Titration Acidity (TA) by indicator

PROCEDURE

- Pipet 5.00mL of white wine (2.00 for reds) into 250mL Erlenmeyer flask
- To the flask, add 100 ml of DI water, using a graduated cylinder, and three drops of phenolphthalein.
- Titrate the solution in the flask with 0.10 M NaOH to a pink endpoint. Remember to record the initial and final volumes.

CALCULATIONS

$$TA \text{ (g/100mL)} = (V_{NaOH})(Conc) (1.5)$$

For red wine, multiply result by 5/2.

V_{NaOH} : volume of NaOH used

Conc: molar concentration of NaOH

Two trials for each	V_i	V_f	V_{total}	TA
White – T1				
White – T2				
Red – T1				
Red – T2				

Each student – Using Google Docs, create and share with me a spreadsheet titled, CHM130VV-TA your FULL NAME. Reproduce the above table in a sheet labeled “TA by Indicator”. Use the spreadsheet to carry out all calculations. Do not simply type the numbers into the cells.