LABORATORY TECHNIQUES III: STANDARDIZATION

Date:_____ Name:_____Lab Day/Time:_____

Object

The objective of this experiment is to learn the technique of titration and standardization, and, using this, to determine the concentration of an unknown acid solution.

Procedure

As in Chem 1094 lab manual, pp. _____

Observations

Data

Table 1. Standardization of Base

	First try	Second try
Mass of boat and solid acid		
Mass of boat after solid acid emptied from it		
Therefore mass of solid acid emptied into flask		
Initial buret reading		
Final buret reading		
Therefore volume of NaOH solution used		
Colour of solution at final buret reading		

Table 2. Analysis of unknown acid

	First try	Second try
Volume of unknown acid pipetted into flask		
Initial volume of NaOH solution in buret		
Final volume of NaOH solution in buret		
Therefore volume of NaOH solution used		
Colour of solution at final buret reading		

Calculations

Part A

The moles of solid acid used for each trial, given that the molar mass of the solid acid is 204.225 g/mol.

The moles of NaOH base which reacted at the endpoint of part A for each trial. (Assume that 1 mole NaOH base reacts for every 1 mole of solid acid present).

The volume of NaOH base used in part A (in litres) for each trial.

The concentration of the NaOH base in moles base/ litre base for each trial.

The average concentration of NaOH in moles/litre as determined in Part A

Part B

The volume of NaOH base used in Part B (in litres) for each trial.

From the average molarity of NaOH and the volume used in Part B, calculate the moles NaOH base added at the endpoint in part B for each trial.

The moles acid neutralized at the endpoint in part B for each trial. (Assume that 1 mole NaOH base neutralizes 1 mole acid).

The volume of unknown acid (in litres) originally placed in the flask.

The concentration of the unknown acid solution in moles acid per litre acid (originally added) for each trial. Also calculate the average concentration of acid.

Summary of Results

	First try	Second try	Average
Molarity of NaOH			
Molarity of Unknown Acid			

Questions

Attach any assigned questions.