

## Gatorade Lab Results

### 1. Hypothesis (including all 4 parts) for the Gatorade Lab:

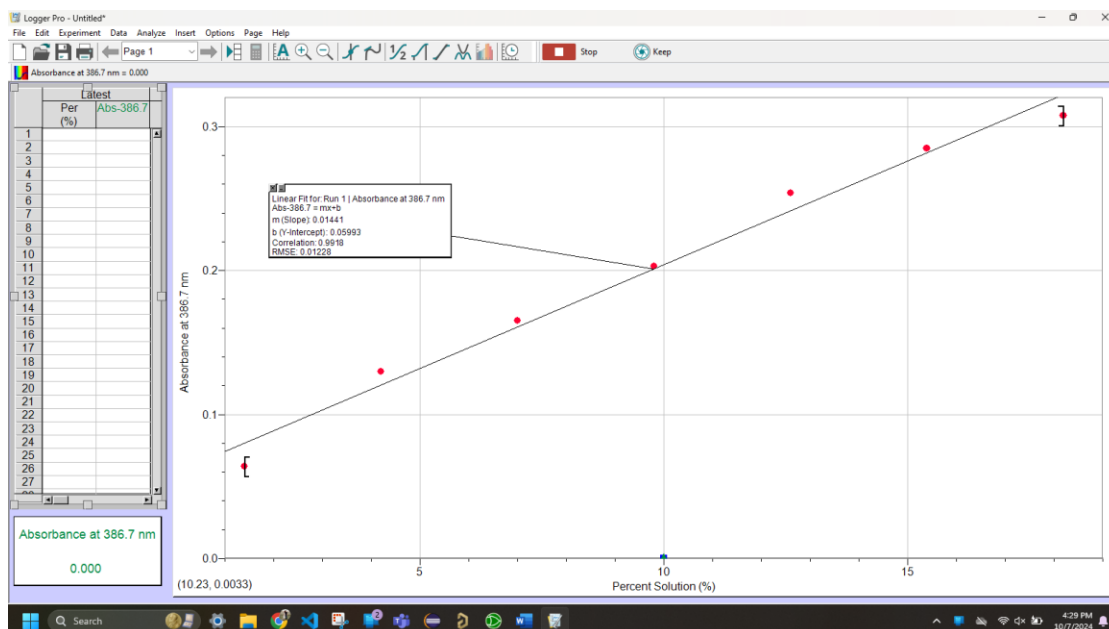
We are creating samples of Gatorade using Gatorade mix with specific percent solutions, then measuring the absorbance of each. We then measure and calculate the bottled Gatorade to recreate the bottled kind with our mixed kind.

We expect to be able to recreate the bottled Gatorade using this method. The reasons for this expectation is because we can add whatever amount of mix it takes for it to reach what the bottled Gatorade is at. Once we measure it and compare to our test percent solutions, we can determine through calculation the percent solution of the bottled Gatorade. Doing the experiment this way allows us to have a linear line of our percent solutions which makes it easy to calculate the bottled Gatorade. Calculations are also exact and the only measurement error will be our scooping up the mix and water measurements.

### 2. Does your data support your hypothesis? Why or why not?

Our data does support our hypothesis because we were able to recreate the bottled Gatorade through this method. The measurements for the bottled Gatorade and our recreated Gatorade with the proper percent solution of mix was the same.

### 3. Please Insert a graph of your data. Your graph must include at least 7 points, have a linear fit line on it, and have *correctly* labelled x and y axis.



### **Bio 180L Concentration Practice Problems**

You do not need to show your work for the following questions. Just provide your answers.

1. How many grams of Sodium Chloride (MW = 58.4) are needed to make .5 L of a 0.15 M solution?

4.38 g

2. How many grams of MES buffer (MW =195.2) are needed to make 2.1 L of a 0.3 M solution?

122.98 g

3. How many Liters of a 1 M solution can be made with 200 g of Sodium Acetate (MW = 82)?

2.4 L

4. How many grams of ammonium sulfate (MW= 132.1) are needed to make 1.5 L of an 8 M solution?

1585.2 g

5. A biochemist prepares a 1 L solution using 12.1 g of Tris Buffer. The final concentration is 0.1 M. What is the MW of Tris Buffer?

121 g/mol

6. A Microbiologist prepares 0.8 L of a 2% solution of Yeast Extract. How many grams of yeast extract does she need to add?

16 g

7. A doctor orders a 1 L of a 5% Dextrose solution (MW=180) IV drip. How many grams of Dextrose do you need to add?

50 g

8. How many grams of sodium chloride are needed to make 0.75 L of a 0.9% solution?

6.75 g

9. What is the molarity of a 0.9% solution of Sodium Chloride?

11.5 mol/L

10. You add 4.7 g of  $\text{MgCl}_2$  (MW = 95.2) to water. The final volume is 300 mL. What is the concentration in % solution? What is the concentration in Molarity?

% solution = 1.6 %

Molarity = 67.5 mol/L