

CHEQ 1094: LABORATORY TECHNIQUES I: DILUTION

Date: _____

Name: _____

Lab Day/Time: _____

Objective

The objective of this experiment is to accurately determine the density of a solution and to perform an accurate dilution.

Procedure

As in the Chem 1094 lab manual, pages _____

Observations

Data

Table 1. Mass of solution

	Trial 1	Trial 2
Mass of empty flask and stopper		
Mass of flask and stopper after adding 10.00 mL of solution		

Table 2. Dilution of CuSO₄

Concentration of original CuSO ₄ solution	
Pipet volume for first dilution	
Volumetric flask volume for first dilution	
Pipet volume for second dilution	
Volumetric flask volume for second dilution	
Absorbance	

Calculations

Calculate the mass of each 10.00 mL sample, then calculate the average mass and density of the solution.

Calculate the concentration in the first diluted solution in g/L from the concentration listed on the stock bottle.

Calculate the concentration in the second diluted solution in g/L from the concentration of the first diluted solution. (Do not consider the mass of ammonia.)

Results

Average density of the original CuSO ₄ solution	
Final concentration of diluted CuSO ₄ solution	

Questions

1. Define what is meant by the density of a solution.
2. Define what is meant by the concentration of a solution.
3. What is the difference between the density of a solution and the concentration of a solution? Are they the same thing? Can they both be expressed in units of g/mL?