ocean county college essay sample

Science, Chemistry

The purpose of this experiment was to construct a Beer's Law Plot, determine the concentration of a sample using the Beer's law plot, and to determine the concentration of Blue Dye #1 in a commercial product using visual Colorimetry.

Procedure

This lab consisted of calculating %T of given data and constructing a Beer's Law plow. Secondly, The Beer's Law data was used to extrapolate the concentration of sample data for a drug. Lastly, a color standard was prepared with a known concentration to use in visual colorimetry to approximate the concentration of Blue Dye #1 in a commercial product. (P. 119-132 Jeschofnig , n. d.).

Observations and Results

Beer's law plot and best fit line for the data in Table 1.(given below) Sample Identification Code
Sample Concentration (M)

2 & 3)
Using the Beer's law plot (above) and best fit line, the concentrations for samples: Q021015-01, Q021015-02, Q021015-03, Q021015-04 and Q021015-05 are determined. Sample Identification Code
Absorbance
Equation : $A = -163750c + 79.22$
Q021015-01

Concentration of M in batch Q021015 = average of above 5 values = 4)

The company reported that sample Q021015 has an M concentration of 3. 00 x 10^-4 M. Assuming that yours analysis is more accurate so what is their percentage error.

Reported concentration of sample Q021015 = 3. 00 x 10^-4 M

Calculated concentration of sample Q021015 = 2. 16 x 10^-4 M

Not accurate

% error =

5)

By law, Drug Company Q must have an M concentration between 3. 00 x 10-4 M +/- 5%. In other words, the M concentration must be between 2. 85 x 10-4 M and 3. 15 x 10-4 M. Does Batch 021015 meets the legal requirements?

Since, average concentration of M in the batch Q is 2. 16 x 10^-4 M where as the requirement is between 2. 85 x 10-4 M and 3. 15 x 10-4 M. Therefore, the batch does not need legal requirement.

Exercise 2

The concentration of Blue Dye #1 found in the Gatorade Cool Blue was determined to be 1. 8×10^-4. Conclusions
This experiment was designed to explore the methodologies behind determining the concentration of compounds using both qualitative and quantitative data. The conclusions that can be drawn from Experiment 2 and 3 are that the company reported concentrations in sample Q021015 are not accurate and based upon the sampling data the %error of the samples are

38. 89%, which do not meet legal requirements. Through visual colorimetry it was determined that the concentration of Blue Dye #1 is 1. 8×10^-4 moles. This experiment was a success, due to the fact that all objectives were met and satisfactory understanding of the materials was achieved.

References

List all your references. Be sure to use the APA format. 1. P. Jeschofnig (n. d.). Beer's Law and Colorimetry. General College Chemistry (n. d) p.#. 119-132 Hand-On Labs, Inc., Englewood, CO.