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Absorbance vs concentration graph title

According to the Law of Beer, $A=Ebc$, under ideal conditions, the concentration of the substance and its absorption are directly proportional: the solution of high concentration absorbs more light, and the solution of lower concentration absorbs less light. Since concentration and absorption are proportionate, the Beer Act makes it possible to determine an unknown concentration of phosphate after absorption is determined. The overall purpose of this laboratory was to make a calibration curve with an absorption site against concentration, and to be able to determine the concentrations of phosphate in samples of when, surface water and other aqueous solutions of interest. Can we help with your task? Let's do our homework! Professional writers in all subject areas are available and will meet the deadline for your appointment. Free proofreading and editing of copies are included. Experimental: The procedure of this laboratory was obtained from the website or manual of the student laboratory course. Results: Table 1: Absorption vs. Absorption Concentration (at 690 nm) 2.00 x 10-5 M .906 5.00 x 10-5 M .969 1.0 0 x 10-4 M 1.05 2.00 x 10-4 M 1.41 5.00 x 10-4 M 2.37 Graph 1: Absorption vs Concentration Calibration Curve Table 2: Dilution of phosphate runoff Concentration mL Phosphate diluted in flask 100 mL 2.00 x 10-5 M 2 5.00 x 10-5 M 5 1.00 x 10-4 M 10 2.00 x 10-4 M 20 5.00 10-4 M 50 Table 3: Absorption of Solutions at 690 nm Solution Absorption (at 690 nm) Cola Sample 1.216 Unknown Water Sample 0.361 Sampling Calculations: Discussion: 100 mL 1.00 x 10-3 phosphate solution was used to prepare five standard solutions with known concentrations of phosphate. 5.00 ml of each solution of phosphate was added to individual small beaks, and then 1.00 ml of ammonium molybdate solution and 0.40 ml of aminotherapeutic acid reagent were added to each beak. After 5 minutes, absorptions of 690 nm were measured using a spectrometer. The calibration curve, reflecting absorption against concentration, was created with Excel using the growing concentrations of five standard x value solutions and their respective absorption for y values. After cooling, the soda sample was diluted by 50 times ultra-clean water, combining 2 ml of soda and 100 ml of ultra clean water, and then 5.00 ml of that diluted soda pop was delivered in a large test tube. 1.00 ml of ammonium molybdate reagent and 0.40 ml of aminonaptosulfonic acid were also added to the test tube, and after 5 minutes the absorption was measured. The calibration curve created in Part 1 was used to address the concentration of phosphate in soda pop. In Part 3, the same procedure was used as in Part 2 to determine phosphate in an unknown decision. However, the decision was not boiled over in Part 3 as there was no carbonation in the unknown. It was also not diluted because it was a water sample. READ: Reaction heat to form magnesium oxide laboratory Responses. When only molybdate binds to phosphate, it becomes a blue solution indicating the presence of PO43-. The linear relationship between absorption and concentration shows that absorption depends on concentration. The Law of Beer, $A=Ebc$, helped develop a linear equation, since absorption was y, Eb equaled m, and concentration, c, equaled the slope, x, in the equation $y=mx+b$. To calibrate the spectrometer as a workpiece, a solution containing 5.00 ml of water, 1.00 ml of ammonium molybdate reagent and 0.4 ml of ammonium ammonium was used. Because the type of interest was phosphate, all but phosphate was used in the workpiece, and ranged from the measured absorption of the ditch containing phosphate solution. The results were not quite as expected as the data was sampled due to a large number of experimental errors in part 1 of the lab. This error occurred from not adding the correct number of solutions to each beak, dropping the absorption rate, and then the calibration curve. The absorption of each of the five wrong decisions also affected the linear equation obtained in Part 1, which made R2 not so close to the expected value of 1. The linear equation, which is not an ideal straight line, also influenced the determination of the concentration of phosphate in Cola in Part 2. The impact of this experimental error in Part 1 affected the rest of the lab without allowing for perfect results. Conclusion: In this experiment, the calibration curve was created by absorbing graphics against concentration in Excel. The calibration curve was built by measuring the absorption rate of phosphate in five standard solutions. The linear equation derived from the calibration curve was then manipulated and used to determine the concentration of phosphate in soda pop, and in an unknown aqueous solution. The concentration of phosphate experimentally determined 1.86 x 10-2 M in Cola, and 1.41 x 10-4 M in an unknown sample of water. 2. Construct the following data as absorption against concentration X in Excel Absorption, Molar concentration X 0.045 3.0x 10-4mol/L 0.097 6.2x 10-4mol/L 0.14 9.0 x 10-4mol/L 0.35 2.2x 10-3mol/L 0.51 3.2x 10-3mol/L When building in Excel, make sure that (in EXCEL, not written manually) you mark each cell and place a name that includes your name (Mahmoud). Perform a linear regression on the data. Use the graph to answer the following questions: a.What is the line equation for this graph and what is its R2 value? b.What is the molar concentration of X, when its absorption is 0.23? c.A 5.0x 10-3 M solution will have absorption? d. What would be the absorption if the path in question 3 was doubled? I tried to answer that for you last night. So, let me try again this way.*The idea is that you rotate [FeSCN+2] on the x axis and absorption on the y axis. (x,y).. ([FeSCN+2], absorption).. get it?then.. you draw a line through the data that matches the data in the best way possible. You'll probably notice that the data points definitely won't lie on the line because you'll have a measurement error, but they should be pretty close. After you understand this, if you know the value for a specific absorption, you will find it on the y axis, then go horizontally to the line you drew through the data points, then pull vertically down to the x axis and read the corresponding value for [FeSCN +2].. OK?***Nowadays, however, we can use computers to draw a graph and then dig up a piece of graphics paper and do it manually. What is the advantage of this? besides speed, 1) assuming you enter data correctly to tell excel computer draws graph and does not make errors planning data points, many errors are made in the graph!!!!. 2), it automatically resizes everything for you. I can't do it with graph-paper.. you have to start everything with, 3), you can easily save the file forever, 4) you can easily configure the data to make it linear Such as.. conversion to log graphs is 1 click. and most importantly , 5).. will run a linear regression of the smallest squares to find the best line through your data points and draw it for you. It will then generate a mathematical connection to convert from a say absorption into [FeSCN+2] and you don't have to eyeball the chart. Why on earth anyone, like another matcher here, would recommend doing it manually behind me. We have computers to do this for us as we have calculators to help with mathematical operations. The hand graph is about as significant as the use of sliderhead! Ngo.. again, from my reply here.. _ylt=Akv1R... [FeSCN+2] = (absorption + 0.008441) / 426.496587plug in absorption and calculate [FeSCN + 2]*, if you want to give me your email, I will send you an Excel spreadsheet with data, graphics and equation and possibly the best explanation. The basic idea here is to use a takeover-building schedule against well-known solutions. Once you have that you can compare unknown specimen to find out its concentration. You will apply the Beer Act to calculate concentration. Equations for the law of beer: $A = \epsilon mCl$ (A = absorption, ϵm = molar extinction coefficient, C = concentration, l = path length 1 cm) You must have a data set used to create a standard curve. The graph should draw a concentration (independent variable) on the x-axis and absorption (dependent variable) on the y-axis. The equation should be in the form of $y=mx + b$. y = absorption (A) Note: no absorption unit x = concentration (C) Note: unit M or mol / L m = (ϵm) = tilt or molar extinction factor in the law of beer, which has units #M^-1 cm ^-1# So, $A = \epsilon mC +b$ If you decide C, you should get $C = (A-b)/\epsilon m$ So if you put y-interception from absorption and divide along the slope, you will find the concentration of your sample. Here's a video of the lab applying this concept. Hope it helps! Helps!

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