

Advanced Placement Chemistry HW II Spectrophotometry and Colorimetry

1. A sample of Cu^{+2} solution was analyzed at 575nm and was found to have a % transmission of 61.58%. calculate its absorbance at this wavelength.
2. What is the % transmission of a sample with an absorbance of .8125?
3. A nickel compound in solution has a concentration of 8.0×10^{-5} M and was found to have an absorbance of 0.580. Determine the concentration of another nickel solution of the same compound (measured the same conditions as the known) if its absorbance is 0.474.
4. A 7.50×10^{-5} M solution of KMnO_4 has an absorbance of 0.658 when measured in a 1.50 cm curvete at 525nm
 - a. Calculate the molar extinction coefficient for KMnO_4 on the basis of these data (indicate units)
 - b. What is the absorbance of this sample if the cell path is changed to 1.00cm.?
5. If a sample of a colored substance with a molar absorbtivity (extinction coefficient) of $120,000 \text{ L mol}^{-1} \text{ cm}^{-1}$ is measured in a 4.00cm curvete and has an absorbance of 0.315, what is the Molar concentration of this sample?