FLINN SCIENTIFIC

Name_____

Coloring Sodium Polyacrylate with Metal Ions Worksheet

Data Tables

Part 1

Metal	Color of Solution	Color of Metal(II) Polyacrylate
Cu^{2+}		
Fe^{2+}		

Part 2

Absorbance of Cu^{2+}(aq) Standard Solutions at 810 nm

[Cu^{2+}], mol/L	Absorbance
0.05	
0.04	
0.03	
0.02	

Mass of Sodium Polyacrylate _____ g

Absorbance of Cu^{2+}(aq) Solutions at 810 nm During Ion-Exchange

Time (min)	Absorbance
0	
5	
10	
15	
20	
25	
30	
Final Solution	

Post-Lab Questions *(Use a separate sheet of paper to answer the following questions.)*

1. Use graph paper or graphing program to construct the copper(II) ion calibration curve.
2. Determine the [Cu^{2+}] of the diluted sample from the calibration curve.
3. How many moles of Cu^{2+} ions are present in the diluted sample?
4. How many moles of Cu^{2+} ions were present in the original sample?
5. How many moles of Cu^{2+} ions were removed by sample of sodium polyacrylate?
6. Based on your results, calculate the copper(II) ion removal capacity of sodium polyacrylate, that is, mol Cu^{2+}(aq)/gram sodium polyacrylate.