

Acid/Base & Solubility Bonus Homework

(This assignment is only for those students not participating in the Mars Project)

Distributed: Monday, April 30, 2001

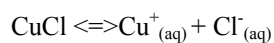
Due: Friday, May 4, 2001

You may use the virtual lab (on the links page of the course web site) to check your answers to some of these problems. To load the assignment, select "Load Homework..." from the "File" menu, and select "Chem106: HW Bonus AcBaSol".

- 1 (5 points) You have three bottles, one filled with 1M NaAc (NaAc = sodium acetate), one filled with 1M Acetic Acid, and one filled with distilled water. You want to make a buffer that has $\text{pH}=4.75$, and such that when 1ml of 10M HCl is added to 100ml of buffer, the pH goes from 4.75 to 3.75. What concentration do you want HAc and NaAc to have in the buffer solution?
(please show your work)

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- 2) (5 points) The solubility of copper chloride in water at 30°C is 0.04863410106 g/L. At 60°C, the solubility is 0.1024522056 g/L. Please calculate the solubility of CuCl at 90°C. (Assume that ΔH and ΔS are independent of temperature)



Please describe your complete procedure and the key quantities you measured.

Solubility at 90°C _____ g/L