

### LABORATORY REPORT SHEET

Name \_\_\_\_\_ Date \_\_\_\_\_ Sect \_\_\_\_\_  
**Cell 1**

Cathode half-reaction	Anode half-reaction	Overall chemical reaction

Predicted potential for cell reaction (using Nernst equation)

How does your experimental potential compare with the calculated value (i.e. % error)?

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**Cell 2**

Cathode half-reaction	Anode half-reaction	Overall chemical reaction

Predicted potential for cell reaction (using Nernst equation)

How does your experimental potential compare with the calculated value?

Experiment 22-026  
Investigation of Galvanic Cells

**Cell 3**

Cathode half-reaction	Anode half-reaction	Overall chemical reaction

Predicted potential for cell reaction (using Nernst equation)

How does your experimental potential compare with the calculated value?

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#### Cell 4

Cathode half-reaction	Anode half-reaction	Overall chemical reaction

Predicted potential for cell reaction (using Nernst equation)

How does your experimental potential compare with the calculated value?

**Cell 5**

List the reduction half-reaction involved in this concentration cell, along with the  $\epsilon^\circ$  values.

reduction half-reaction	$\epsilon^\circ$
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Write the half-reaction occurring at the cathode (include concentration):

Write the half-reaction occurring at the anode(include concentration):

Net chemical reaction involved in the cell(include concentrations):

Predicted potential for cell reaction (using Nernst equation)

How does your experimental potential compare with calculated value?

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**Cell 6**

List the reduction half-reaction involved in this concentration cell, along with the  $\epsilon^\circ$  values.

reduction half-reaction  $\epsilon^\circ$

Write the half-reaction occurring at the cathode(include concentration):

Write the half-reaction occurring at the anode(include concentration):

Net chemical reaction involved in the cell(include concentrations):

Predicted potential for cell reaction (using Nernst equation)

How does your experimental potential compare with calculated value?

**Cell 7**

List the reduction half-reaction involved in this concentration cell, along with the  $\epsilon^\circ$  values.

reduction half-reaction	$\epsilon^\circ$
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Write the half-reaction occurring at the cathode(include concentration):

Write the half-reaction occurring at the anode(include concentration):

Net chemical reaction involved in the cell(include concentrations):

Predicted potential for cell reaction (using Nernst equation)

How does your experimental potential compare with calculated value?

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#### Cell 8

List the reduction half-reaction involved in this cell, along with the  $\epsilon^\circ$  values.

reduction half-reaction  $\epsilon^\circ$

Write the half-reaction occurring at the cathode(include concentration):

Write the half-reaction occurring at the anode(include concentration):

Net chemical reaction involved in the cell(include concentrations):

Reduction Potential for the observed reaction \_\_\_\_\_

Using the Nernst equation, determine the value for the  $K_{sp}$  for AgCl

How does calculated  $K_{sp}$  value compare with the textbook value?

For cell 8, suppose that your observed voltage was 10% higher than the value you actually observed. What change would that make in the calculated value of the  $K_{sp}$ ? Determine the absolute change as well as the percent (%) change.

**Cell 9**

List the reduction half-reaction involved in this cell, along with the  $\epsilon^\circ$  values.

reduction half-reaction	$\epsilon^\circ$
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Write the half-reaction occurring at the cathode:

Write the half-reaction occurring at the anode:

Net chemical reaction involved in the cell:

Nernst equation for this electrochemical cell \_\_\_\_\_

Using the Nernst equation, determine the free  $[\text{Cu}^{2+}]$  in solution A:

Determine  $K_{\text{form}}$  from  $[\text{Cu}(\text{NH}_3)_4^{2+}]$ ,  $[\text{Cu}^{2+}]$ , and  $[\text{NH}_3]$ .



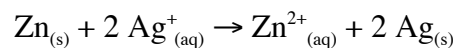
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### Cell 10

Describe the galvanic cell you constructed to determine the *standard potential* for the reaction:



Showing your work, use *your* experimental data to determine the *standard potential* for this reaction, and compare it to the value obtained by using the table of *Standard Reduction Potentials*.