

Name: \_\_\_\_\_  
Blk: \_\_\_\_\_ Date: \_\_\_\_\_  
Chemistry 12  
Electrochemistry Lesson #13  
**ELECTROLYSIS**

Electrolysis is \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Electrolytic Cell or Electrolysis Cell \_\_\_\_\_  
\_\_\_\_\_

IMPT!!! Electrolysis supplies energy to NON-SPONTANEOUS electrochemical reactions ( $E^{\circ}_{\text{CELL}} < 0$ ), allowing them to occur.

A SIMPLE ELECTROLYTIC CELL: \_\_\_\_\_  
Here is an illustration:

**ELECTROLYSIS OF AQUEOUS NaI**  
**\*\*\*\*THE ADDITION OF WATER\*\*\*\***

Here is an illustration:

IN THE ELECTROLYSIS OF AN AQUEOUS SOLUTION YOU MUST ALWAYS CONSIDER THE REDUCTION/OXIDATION OF WATER!!!!

Possible Reductions:

Possible Oxidations

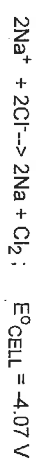
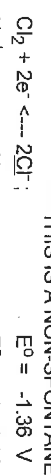
WHEN SELECTING THE PREFERRED REACTION:  
Select the rxn requiring the \_\_\_\_\_ voltage input!

ACTUAL REACTION:

IN NEUTRAL aqueous solutions, water Half-Reactions

IN ACIDIC aqueous solutions, water Half-Reactions

ONLY REACTANTS PRESENT ARE :  $\text{Na}^+$  and  $\text{Cl}^-$   
\*\*\*\*THIS IS A NON-SPONTANEOUS REACTION\*\*\*\*



FOR HOMEWORK: Do Exercise 64.

**Example:**

What products are formed at the anode and cathode and what is the overall reaction when a solution containing HBr (aq) is electrolyzed using inert electrodes? Determine the minimum voltage which must be applied before the reaction will occur.

Step 1.

Step 2.

Step 3.

Step 4.

Step 5.

**For SEATWORK/HOMEWORK: Do Exercises: 64 - 70  
PLO's W1 - W4, W8**

**REMINDERS:**

UNIT TEST IS ON \_\_\_\_\_  
PLO'S ARE DUE \_\_\_\_\_