

## Activity 5-D: The Electrolysis of Water

Name: \_\_\_\_\_

Text pg 180-181

Refer to "Electrolysis of Water Diagram" handout

### Materials

Hoffman Apparatus	2 test tubes	wire leads
water	2 electrodes	6 V battery
sulfuric acid	wood splints matches	

### Procedure

- Set up the Hoffman Apparatus.
- Connect the Hoffman Apparatus to the 6 V battery; turn it on.
- Observe the reaction; let it run for at least 10-15 minutes.
- Collect the gas obtained in greatest quantity. Perform a standard test. Identify the gas.
- Collect the gas obtained in least quantity. Perform a standard test. Identify the gas.

### Discussion Questions

1. What happened when you tested each of the gases with a blazing splint? Identify each gas.
  
2. Compare the volumes of the two gases formed.
  
3. The formula for water is  $H_2O$ . What is the relationship between the formula for water and the volume of the gases produced.
  
4. What effect did the sulfuric acid (or hydrochloric acid) added to the water have on the reaction?

5. Describe the Gas Tests used and the results obtained to determine what gas is present in each of the two columns of the apparatus.

a)

b)

6. In this activity, state an instance when energy was

a) absorbed

and b) released.

7. Write the word equation for the decomposition of water.