Changes at the Electrodes

Objectives

At the end of the activity, you should be able to:

1. gather evidence to determine whether water is a compound or an element; and
2. observe evidence of chemical change during the electrolysis of water.

Materials needed

2 pencil leads distilled water one 9 V dry cell 2 connecting wires plant indicator salt (as electrolyte)	toothpick (for mixing) medicine dropper (for plant indicator) opaque white plastic cup (or any shallow container with wide open surface)

Procedure

1. Pour distilled water into the plastic cup just enough to cover whole surface of the cup. Place a pinhead size of salt into the water and mix very well using the toothpick.
2. Add drops of plant indicator into the water. Slowly swirl (or mix using a toothpick) until color is consistent all throughout.
3. Get the dry cell and clip a wire to each of the terminals of the dry cell. At the end of each wire, clip a pencil lead. The pencil leads will serve as the electrodes.
4. Submerge the electrodes into the water you prepared in Step 1. Make sure the electrodes will not touch each other. Observe and note any changes on the water.

[Q1] Describe any change at each electrode?

[Q2] What does change in each electrode mean? Explain your answer.

5. Disconnect the dry cells to stop electrolysis. Stir the mixture using one of the pencil lead.

[Q3] Describe any change.

[Q4] What do you think the change mean? Explain your answer.

[Q5] Using the results of the activity, is water an compound or an element? Explain your answer.

*Adapted from: UP NISMED. (2001). Activity 26: Changes at the electrodes. *Practical work in high school chemistry: Student activities.* UP Diliman, Quezon City: UP NISMED.