

Lesson 20 Electrolysis of Water

Initial Preparation

1. Make sure you have fresh lantern batteries (6-V).
2. Place the electrode stand in the clear container and fill with water to a couple of centimeters above the end of the bolts.
3. Add 3 scoops of sodium sulfate to the water in the container and mix until dissolved. **If this step is omitted, the experiment will not work!**
4. Submerge the 2 small test tubes and allow the solution from step 3 to completely fill them.
5. Put your forefinger over the end of each test tube and lift it up over each bolt below the water level. Remove your finger and gently lower the tube down over each bolt, keeping the mouth of the tube below the water level at all times.

Electrical Hook-up

1. Hook the black wire of the electrode stand to the negative (-) central post of the left battery.
2. Hook the red wire of the electrode stand to the positive (+) outer post of the right battery.
3. With a separate wire, hook the (+) outer post of the left battery to the (-) center post of the right battery. This completes a series circuit of 12V (6V + 6V).

Observations

Within a minute or two you should see gas bubbles at each electrode. The hydrogen will collect twice as much volume at the negative electrode (black wire) as the oxygen at the positive electrode (red wire).

The brown stain that forms in the water is iron hydroxide residue from the stainless steel bolt electrodes. Rinse off the electrodes and wash out the container when the experiment has been completed.