

## **655-0240 Electrolysis Apparatus**

**Introduction:** Electrolysis of water is nothing more than the production of hydrogen and oxygen gas from water. It is accomplished by running a current through the water, which causes H<sub>2</sub>O molecules to split into their component gases. The process has been known since at least 1800 when it was observed using a Voltaic Cell; it may have been discovered in 1789, but this can not be confirmed.

Under normal circumstances water is a very stable molecule; it requires a great deal of energy to break hydrogen bonds. This means that water can only be split in the presence of a fairly large amount of energy. Electricity is particularly useful because of its ability to influence ions.

Distilled or nearly pure water will not work with your kit. Pure water is essentially an insulator, because it is dissolved ions in water that carry electricity. Tap water will usually work well with this kit, although bottled water may not. A drop of lemon juice or pinch of salt can be used if the water is too pure.

**Operation:** To use your kit, please follow the instructions below. You will require a 6V battery or low voltage power supply.

- Fill the pan with water until at least a third of the height of the electrodes is covered. This will give you the maximum surface area. The electrodes are carbon, which is inert enough to resist losing electrons to the water.
- At the top of the jar you will notice two spring loaded tabs for holding test tubes in place. Put the test tubes in these tabs so that they hang over the electrodes. Make sure the bottom of the test tubes are under water.
- Connect the leads to the battery terminals. The jacks for the electrodes are on the bottom of the jar.
- After a few seconds you should see micro bubbles begin to form around the electrodes, particularly the negative one. The negative electrode produces hydrogen gas, which will be produced in twice the quantity as oxygen gas, owing to the composition of water.
- Higher voltage will produce more gas faster.

### **Warranty and Parts:**

We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain small parts that can be choking hazards. Adult supervision is required.