

ELECTROLYSIS APPARATUS

N99-B-2637-040 (1 Set)
N99-F35-1305 (6 Sets)



Manual of Operation

Important!

Read the following before using this equipment:

Carefully follow all instructions and observe all precautions given in this manual.

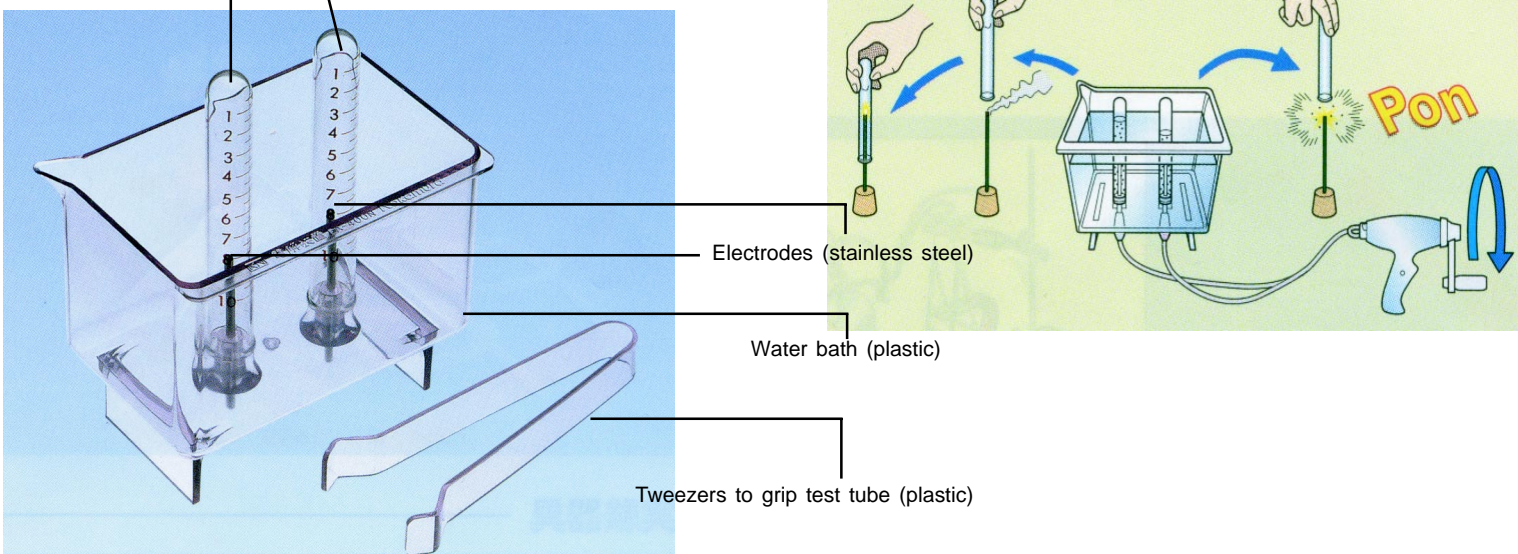
Purpose of Use

This unit is an experimental apparatus for easy use by junior high school students to conduct electrolytic analysis of water or some other substances in a science class.

Construction

The unit is composed of plastic water bath with two stainless steel electric poles, two gas trapping glass tubes with graduations, and a pair of plastic tweezers to grip a gas trapping tube.

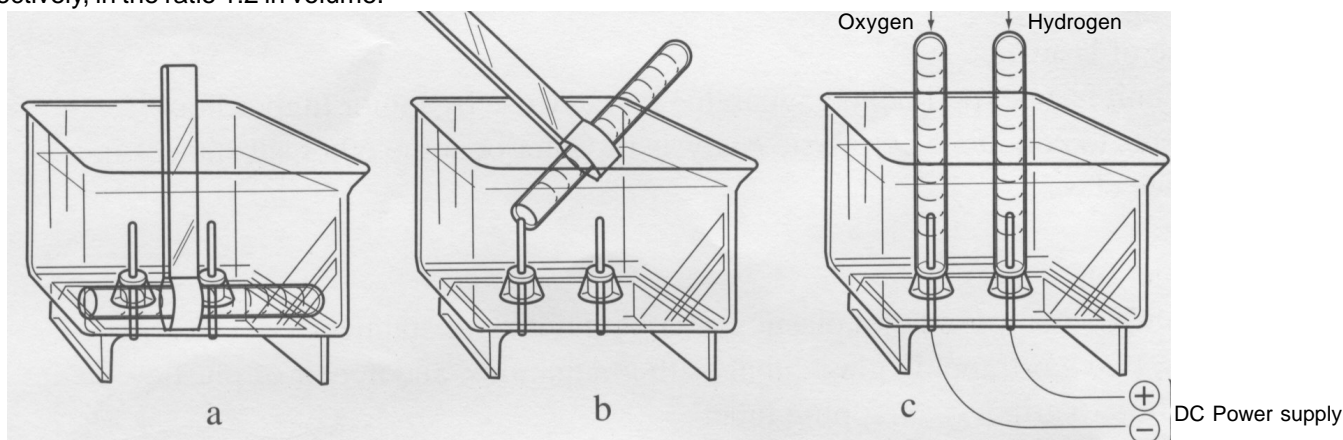
Test tube (with graduations) 15X105mm

**Experiment**

Electrolytic analysis of water

1. Pour diluted sodium hydroxide solution into the water bath up to about 1cm above the tips of the electrodes.
2. Immerse the tube into the solution as illustrated in (a) and fill it with the liquid.
3. Grip the tube with the tweezers and place it on the pole with the mouth down and the solution in it as shown in (b).
4. After two tubes are placed, connect a conductor between each of the metal electrodes protruded at the bottom of the bath and respective terminals of a DC power supply. (c)

* In this way, when a proper level of voltage is applied, oxygen and hydrogen gases are produced from the anode and the cathode, respectively, in the ratio 1:2 in volume.

**Notes:**

1. An appropriate level of voltage is 4 to 10 VDC. If dry cells are used as the power source, 3 to 4 cells must be connected in series (1.5Vx3 or 4).
2. The concentration of the diluted sodium hydroxide solution should be 5% to 10%. When dry cells are used, lower concentration causes longer time in the analysis.
3. Contact with the solution will make you hand slimy and hurt the skin. Wash your hands with water when wet with the solution.
4. When dilute sulfuric acid is used for electrolytic analysis of water, the electrodes are slightly corroded and oxygen is produced in a slightly different ratio from the 1:2 in volume.