

Serrata HOFMANN VOLTAMETER

Catalogue Number 1102001

A **Hofmann Voltameter** is an apparatus for electrolyzing water.

The Serrata Hoffmann Voltameter is of the low form design to assist in giving the unit a long life within the laboratory environment.

The unit consists of a filling tube and two parallel reduced length graduated burettes terminated at one end by stopcocks for the release of the decomposed gasses and the other end terminated with platinum electrodes mounted into rubber stoppers for connection to a direct source of electricity.

OPERATION AND SETTING UP

After unpacking the voltameter inspect it carefully for integrity or any damage that may have occurred in transit and examine the platinum electrodes which are supplied for protection in narrow glass test tubes.

The platinum electrodes are mounted in glass which fits through the rubber stoppers and these **MUST** be handled with care as they are expensive to replace.

Gently straighten the two electrode “leaves” so they are presenting the maximum surface area and carefully insert the red one and then the black one into the openings at each end of the two burette assembly.

Close the stopcocks at the other end of the burette assembly.

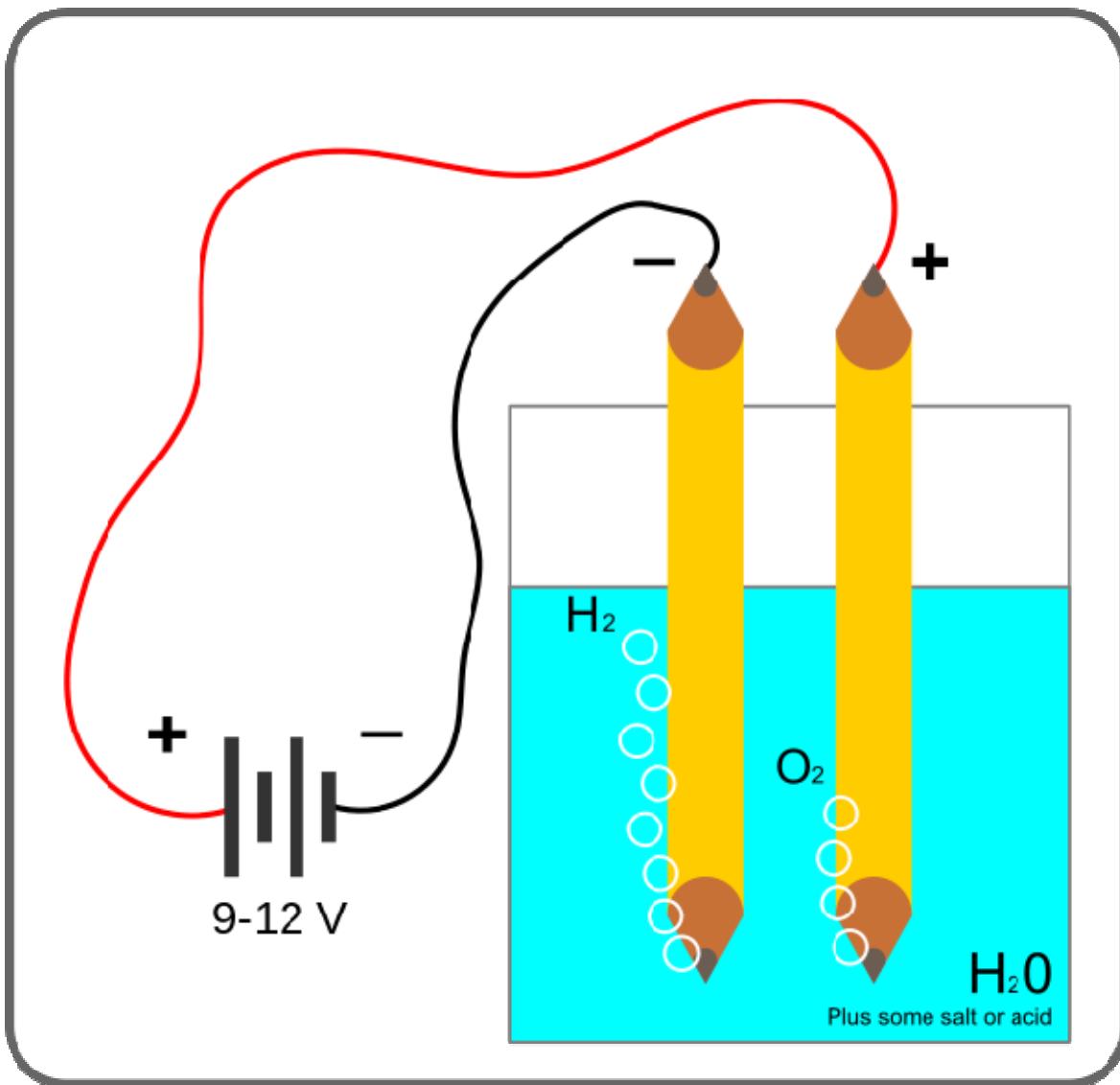
Using a retort stand and burette clamp carefully attach to the reservoir arm so the whole apparatus is visible for the experiment, but ensure the bottom part of the voltameter is about 100 mm above the bench.

Connect each wire, red and black, to alligator clip leads and plug the other end of these leads into a DC bench power supply such as the Serrata Universal Power Supply 1035411A using the red and black DC terminals.

Fill the reservoir with water until the electrodes are completely covered and then up to the graduated 25ml mark which provides the correct starting point.

At this point in the experiment check carefully that there are no leaks around the edges of the stoppers or down the glass stem of the glass electrodes.

It will be necessary to add a small amount of Hydrochloric or Sulphuric Acid to improve conductivity - about 5% will be adequate.



Now turn on the power supply and select a voltage of between 6 and 12 volts.

Within a very short period of time electrons from the cathode will be given to Hydrogen cations to form Hydrogen gas and similarly at the positively charged anode an oxidation reaction occurs generating Oxygen gas and giving electrons to the anode to complete the circuit.

As the experiment progresses the decomposition of water into its component gasses can be observed and clearly measured in the graduated burettes.