Electrophoresis apparatus

21.12.10 Ae 5441.00

Apparatus components:

Electrophoresis apparatus (1) with lid (3) . . . . . 1 ea.
Dimensions: 210 x 160 x 80 mm
Level (9) . . . . . 1 ea.
Glass plate (8) . . . . . 1 ea.
Tray for casting gels (5) . . . . . 1 ea.
Plastic combs (6) . . . . . 2 ea.
Plastic edging (2 x 6 x 88 mm)(7) . . . . . 2 ea.
Synthetic material . . . . . 1 ea.
User instructions . . . . . 1 ea.

Warning: High voltage may be present when using this apparatus.

The electrophoresis apparatus is made of acrylic plastic.

The apparatus is provided with three support pads, two of which can be adjusted by means of screws. The level can be used for this adjustment to make sure that the apparatus is horizontal.

The lid of the electrophoresis apparatus has been constructed in such a way that it is not possible to touch the high voltage parts while the apparatus is in use.

The connecting cables are supplied with safety jacks.

There are two electrode chambers for the buffer solution. Between these chambers there is a container for the gel. This container has been manufactured with a glass plate glued in place so that cold water from a tap can be connected via two tube connectors on the apparatus.

A platinum electrode is present in each electrode chamber.

A tray is provided and two chambs for casting gels. When the gel is to be cast, the edges (4) of the tray are folded up, and a comb is placed at the place desired. When the gel is ready for use, the comb is removed, and the edges are pressed down. The tray with the gel is placed on the block in the middle of the electrophoresis apparatus.

It is also possible to use prepared gels. These can be placed directly on the cooling plate in the apparatus.

If the total charge for the particles to be examined are negative, the samples should face the cathode (black wire), and the particles will diffuse towards the positive anode (red). For positive particles the situation is opposite.

Samples are placed in the holes in the gel using a thin glass tube or eye dropper. The buffer solution is poured into the electrode chambers so that the liquid just covers the gel. Another option two contact bridges of e.g. synthetic material or filter paper can be used. The contact bridges are placed a few millimeter in over the gel on either side and are dipped down into each buffer solution. A plastic strip is placed over each contact bridge and then the glass plate is placed on top to hold the contact bridges in place. The buffer solution much completely cover the platinum electrodes.

The lid is placed on the electrophoresis apparatus and pressed firmly into position.

The electrophoresis apparatus can now be connected to the power supply - the red lead (positive) to the anode and the black lead (negative) to the cathode.

The cooling water is connected to the electrophoresis apparatus with two pieces of silicone or plastic tubing which is attached to the two tube connectors on the apparatus. One tube is connected to the cold water tap, and the other tube is placed so that the water can run out in a sink. The water flow rate should be 0.5 liters/minute at the most. It is not recommended to use the apparatus without cooling.

The power source is turned on and adjusted to the desired voltage.

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After the appropriate time interval the experiment is stopped by turning off the power supply and cooling water.

The result of the experiment can be seen directly, if possible, by observing the color of the gel after illumination of the gel with ultraviolet light. (Fluorescent material can, if desired, be added to the gel.)

WARNING:

Take the necessary precautions with respect to the use of specific chemicals used in your experiments.