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**INSTRUCTION MANUAL
OF
HORIZONTAL GEL ELECTROPHORESIS
APPARATUS FOR CELLULOSE ACETATE STRIPS**

**QUADRA-STRIP
(Cat No. THCQR-003208)
(Old Cat No. 23-08328)**

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Essential components of the Apparatus:

- a) One tank with male connectors.
- b) One lid.
- c) One cellulose acetate (CA) strip holder
- d) One set of connecting cords.

CAUTION

Use the apparatus with care. It should be washed and rinsed with soft water, air dried at room temperature and stored covered.

It should **NOT BE**:

- Subjected to impact,
- Exposed continuously to temperatures outside the range of 0–40°C,
- Handled with abrasive or sharp objects,
- Exposed to organic solvents such as aromatic or halogenated hydrocarbons, ketones, esters, alcohols
- Over 30% or concentrated acids over 25%,
- Exposed to other solutions which will attack plastics such as acrylic, nylon and polycarbonate.

To avoid electrolytic corrosion, always dry the connecting pins on the central electrode unit before attaching the electrical cords to them.

Other items needed to perform horizontal gel electrophoresis:

- a) To clean the apparatus: Abrasive- and enzyme-free detergent powder; de-mineralized tap water and a squirt bottle containing distilled water.
- b) To assemble the apparatus: Tissue paper, Whatman blotting paper, cellulose acetate strips, blunt forceps, a pair of scissors.
- c) To prepare the agarose gel: Stock buffer; agarose powder; pipettes (10 mL and 5 mL); 20 µL pipetting dispensers; levelling table; magnetic stirrer with hot plate.
- d) To prepare and load the samples: Polypropylene tubes, thin brush/ applicator, dye (bromophenol blue) in appropriate buffer, high-speed centrifuge.
- e) To separate the sample components: A constant voltage power supply (300 V, 100 mA).
- f) To view bands: Ponceau S stain.
- g) To quantify the bands: densitometer, OD meter

ASSEMBLING THE APPARATUS—A SUMMARY

- 1) Place the Strip holder in the tank.
- 2) Mount the CA strips on the holder. In the case of serum electrophoresis, set the agarose on glass slides.
- 2) Pour buffer into the tank such that the tank is half filled.
- 3) Wet the Whatman filter paper in tank buffer and cover the edge of CA strips with it.
- 8) Apply the samples with a sample applicator or with a thin brush.
- 9) Cover the tank, connect to a power supply and carry out electrophoresis at 250V.

DETAILED PROCEDURE FOR ASSEMBLING THE APPARATUS.

I Cleaning the apparatus:

- 1) Rinse the tank and strip holder thoroughly with water. In case the tank is dirty, clean it carefully with a dilute Soap Solution. Wash thoroughly with de-mineralized water, and finally rinse with distilled water. Invert to dry.

II Loading the samples and performing the electrophoresis:

- 1) Pour tank buffer into the cathode and anode chambers. Adjust buffer level such that it is half filled.
- 2) Place the strip holder on the platform. Do not touch the strips with bare hands; wear gloves. Wet the strips in the tank buffer for 30 min before electrophoresis. Drain the buffer from the strips and place them on the holder with blunt forceps.
- 3) Wet the Whatman filter in the tank buffer and cover the edges of the strips with it. Avoid bending of the strips, which will affect the result.
- 3) Load the samples on the strips with a thin brush/ sample applicator; avoid spreading.
- 4) Cover the tank with the lid and connect the electrical cords (red to red and black to black).
- 5) Run the gel at constant voltage. A constant voltage of 250V is generally preferred.
- 6) When the sample reaches the end of the strip, stop the electrophoresis.

Note: In case of agarose gel electrophoresis, set the agarose on the slide for 60 min. Place the slides directly on the platform. Cover the edges with the wet wicks. Load the sample with a coverslip. Carry out electrophoresis at constant voltage. Once the indicator dye reaches the end of the slide, stop the run. Stain the slides with Coomassie Blue R.

III Dismantling the apparatus:

- 1) After the run is complete, disconnect the electrical cords and remove the lid.
- 2) Using forceps, remove the strips. Stain it in Ponceau-S solution for 5 min. De-stain it with D/W.
- 7) Store the electrophoresis tank buffer in a container; it can be reused for 2-3 occasions.
- 8) Wash and dry all the parts.
- 9) Place the entire dry unit in the storage box.