

## VAPOUR IN AIR DIFFUSION APPARATUS (EE-1634)

### DESCRIPTION

Using a small sample of the liquid in a narrow vertical tube, and observing its rate of evaporation into stream of air passed across the top of the tube can conveniently be used to study the diffusion of vapour of a volatile liquid into air. The set up consists of a glass tube placed in a water bath. A horizontal glass tube is fixed to the upper end of the tube and air is drawn through this by a small air pump included within the unit. Air flows over this tube maintaining partial pressure difference. A Traveling microscope with sliding vernier scale is provided to measure the rate of fall of solvent within capillary. A stirrer is fitted to maintain constant temperature inside the bath.

### EXPERIMENTATION

- Determination of the diffusion co-efficient of an organic vapour in air.
- To study the effect of temperature on diffusion co-efficient.

### UTILITIES REQUIRED

- Electricity Supply: 1 Phase, 220 V AC, 0.6 kW.
- Required Chemicals & Laboratory Glassware.
- Table for setup support.



### TECHNICAL DETAILS

- Tube : Material Borosilicate Glass.
- Water Bath : Material Stainless Steel with two sides made of glass  
Capacity 8 Ltrs, Fitted with heater and stirrer.
- Heater : Nichrome Wire Heater.
- Stirrer : Stainless Steel, Impeller and shaft coupled with FHP motor.
- Air Circulation : Air Pump.
- Traveling Microscope : 0-150 x 0.1 mm resolution.
- Temp. Sensor : RTD PT-100 type
- Control panel comprising of:  
Digital Temp. Controller cum-Indicator (For Water Bath 0-199.9°C and Standard make On/off switch, Mains Indicator etc.
- Instruction Manual : An ENGLISH instruction manual will be provided along with the Apparatus
- The whole set-up is mounted on a powder coated base plate.