# CONDUCTIVITY MEASUREMENTS IN THE SAPONIFICATION PROCESS OF ESTERS

## Mod. C-AV-10/EV



## DESCRIPTION

Carboxylic acid esters are saponified in an alkaline medium according to a reaction rate of the second order. In the process, hydroxide ions with high ionic mobility are consumed by reacting with an ester. The time course of the reaction can be monitored by measuring the change in conductivity.

## TRAINING PROGRAM

- Determination of the reaction rate constant of the ethyl butyrate saponification process in an ethanol / water mixture at a particular temperature
- Law on the reaction speed of first and second order
- Use of conductometry to follow a chemical reaction and to determine its reaction rate

## COMPONENTS

- Heated magnetic stirrer
- 3 collars
- Support base with rod
- Glass crystalling dish, 1000 ml
- 3-neck flask
- Dimroth condenser
- 2 pipettes, 25 ml
- 1 3-way pipette bulb
- 1 syringe, 1 ml
- Pasteur pipette
- Wash bottle 500 ml
- 2 magnetic stirrer beads
- Chemical reagents:
  - Ethyl butyrate 100 ml
  - Absolute ethyl alcohol 1000 ml
  - Sodium hydroxide 0.1 M, 1000 ml
  - Standard calibration solution 12.88 mS/cm
  - Distilled water

## REQUIRED (NOT INCLUDED)

- **EVLAB DATALOGGER mod. EVS-EXP/EV** including **SOFTWARE EVLAB WORKSPACE mod. SW-C-AV-10/EV** for a total control of interactive experiments
- 1 temperature sensor **mod. EVS-15/EV**
- Conductivity sensor **mod. EVS-BIO-07/EV**
- **PERSONAL COMPUTER**

## SUPPLIED WITH

**THEORETICAL - EXPERIMENTAL HANDBOOK**



**ELETTRONICA VENETA S.P.A.** - 31045 Motta di Livenza (TV) Italy - Via Postumia 16 - Tel. +39 0422 765 802 - Fax +39 0422 861 901 - E-mail: export@elettronicaveneta.com