

CHROMATOGRAPHIC SEPARATION PROCESSES: GAS CHROMATOGRAPHY

Mod. C-AV-52/EV

AC

DESCRIPTION

The chromatographic procedures allow you to separate mixtures through a stationary separation phase and a mobile phase. In gas chromatography, the mobile phase is a gas. The mobile phase in which the mixture to be separated is added carries the mixture through the separation column at a constant flow rate. There are interactions between the stationary and mobile phase. The establishment of equilibrium conditions between the stationary phase and the different substances leads to different migration rates of the individual components. At the end of the column there is a detector which is a thermal conductivity cell which can detect the different substances on the basis of their different thermal conductivities. The signal is detected as a function of time. The different thermal conductivities of the carrier gas and the substance leads to changes in temperature of the electrically heated temperature sensor positioned in the Wheatstone bridge electrical circuit. The resulting electric signal is recorded through a plotter as a function of time (chromatogram).



TRAINING PROGRAM

- Determination of the retention times of several gases and realisation of a chromatographic separation of a butane gas mixture.
- Separation and determination of the components of a two-component mixture of ethanol and ethyl acetate chromatographically.

COMPONENTS

- Scale
- Thermostatic bath
- Chromatographic gas control unit
- Helium steel cylinder
- Chromatographic gas column
- n-butane compressed gas
- Iso-butane compressed gas
- Butane burner
- Ethyl alcohol
- Water jet pump
- Various glassware
- Acetone
- Ethyl acetate
- Pipettes
- Thermometer

REQUIRED (NOT INCLUDED)

- EVLAB DATALOGGER mod. EVS-EXP/EV including SOFTWARE EVLAB WORKSPACE mod. SW-C-AV-52/EV for a total control of interactive experiments
- Temperature sensor mod. EVS-15/EV
- PERSONAL COMPUTER



SUPPLIED WITH

THEORETICAL - EXPERIMENTAL HANDBOOK

