CHM 3120L

INTRODUCTION TO ANALYTICAL CHEMISTRY

LABORATORY REPORT

# EXPERIMENT: DETERMINATION OF HYDROCRBONS BY GAS-LIQUID CHROMATOGRAPHY

Name: Click here to enter text.

Section: Click here to enter text.

Date Experiment Completed: Click here to enter a date.

Paste Excel Plot of your ISOTHERMAL chromatogram here.

1.



Paste Excel Plot of your TEMPERATURE-PROGRAMMED chromatogram here. These two chromatograms should include span the same time axis range.



2. Complete the following Table of Isothermal Data:

|  |  |  |
| --- | --- | --- |
| **Chromatograph**  **Identity** | **Temperature**  **oC** | **Flow Rate**  **mL/min** |
|  |  |  |
| **Component** | **Carbon**  **No.** | **b.p.,**  **deg C** | **tr,**  **min** | **tr',**  **min** | **log tr'** | **W1/2,**  **min** | **ret**  **factor (k)** | **N** |
| Air |  |  |  |  |  |  |  |  |
| pentane | 5 | 36 |  |  |  |  |  |  |
| hexane | 6 | 68 |  |  |  |  |  |  |
| heptane | 7 | 98 |  |  |  |  |  |  |
| octane | 8 | 125 |  |  |  |  |  |  |

3. Calculate and report the resolution for the pentane/hexane pair of peaks for the isothermal chromatogram: Click here to enter text.

4. Paste Excel Plot of log *tr*’ versus carbon number (as abscissa) for the isothermal chromatogram. Have the equation of the linear regression line and the *R*2 value appear on the graph.



5. Paste Excel Plot of your TEMPERATURE-PROGRAMMED UNKNOWN chromatogram here:



6. Complete the following Table of Quantitative Results

|  |
| --- |
| **Identifying Code** |
|  |
| **Component** | **Density, g/mL** | **Known sample** | | | **Unknown sample** | | |
| **area** | **mg** | **area/mg** | **area** | **mg** | **wt%** |
| pentane | 0.6262 |  |  |  |  |  |  |
| hexane | 0.6594 |  |  |  |  |  |  |
| heptane | 0.6838 |  |  |  |  |  |  |
| octane | 0.7025 |  |  |  |  |  |  |