



methyl,1,4-pentadiene (2,4-DMP), which indicated propylene monomer, and 2,4-diethyl,1,4-pentadiene (2,4-DEP), indicative of butene monomer. The ratio of the peak areas of these two pyrolysis fragments were found to be directly related to the original monomer composition.

Figure 2 shows the calibration curve obtained from pyrolyzing copolymer samples with 1-butene concentrations ranging from 11.5% to 46.5%. The area ratios of 2,4-DMP and 2,4-DEP were calculated and plotted versus 1-butene concentration. This gave a very linear calibration curve even without the presence of an internal standard.

#### EQUIPMENT:

#### PYROLYSIS

**CDS Analytical model 1000 Pyroprobe**

#### CHROMATOGRAPHY

Hewlett-Packard 5890 Gas chromatograph equipped with a flame ionization detector.

Column: 30m. X 0.53mm. SE-54 Capillary column with a 0.5um. film.

#### **FOR MORE INFORMATION CONCERNING THIS APPLICATION, WE RECOMMEND THE FOLLOWING READING:**

Analytical Pyrolysis of Complex Multi-component Samples.

J. W. Washall and T. P. Wampler, J. Chromatogr. Sci., 27, 144-148, (1989).

Reproducibility in Pyrolysis - Recent Developments

T.P. Wampler and E. J. Levy, J. Anal. Appl. Pyrol., 12, 75-82, (1987).

Additional literature on this topic may be obtained by contacting your local CDS Analytical representative, or directly from CDS at the address below.

## **ABOUT CDS**

CDS Analytical, Inc. is a leader in the design and manufacture of laboratory instruments for sample preparation and analysis. With 20 years experience in the field, CDS is dedicated to providing the best possible instruments for both research and routine analysis. Well known in the field of analytical pyrolysis, CDS manufactures the Pyroprobe 1000 and 2000 for the introduction and analysis of solid materials by GC, MS and FT-IR. CDS offers a complete line of purge and trap instruments for the analysis of volatile organic compounds in the environmental, food and pharmaceutical areas, as well as custom systems for complex, multicomponent materials investigation. Our customers, their requirements and applications are important to us. To help meet their needs, we offer a wide range of analytical information and the services of our applications laboratory. If you would like additional information, please contact us at the address below, or call us at 1 800 541 6593.