



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**Abstract:** Some thermodynamic quantities were obtained for the interactions of poly [2-(3-phenyl -3-methylcyclobutyl)-2-hydroxyethyl methacrylate-co-methacrylic acid] Poly (PCHEMA-co-MA) with alcohols, ketones, acetates, aromatics and n-alkanes by inverse gas chromatography in the temperature range of 150-180°C. The specific retention volumes,  $V_g^0$ , weight fraction activity coefficients of solute probes at infinite dilution,  $\Omega_1^{\infty}$  and Flory-Huggins thermodynamic interaction parameters,  $\chi_{12}^{\infty}$  between polymers and solvents were determined. The partial molar free energy,  $\Delta G_1^{\infty}$ , the partial molar heat of mixing,  $\Delta H_1^{\infty}$ , at infinite dilution and the solubility parameters of the polymer,  $\delta_2$ , were calculated. The copolymer was characterized by  $^1\text{H-NMR}$ , FT-IR and DSC analyses

**Key Words:** Poly [2-(3-phenyl-3-methylcyclobutyl)-2-hydroxyethyl methacrylate-co-methacrylic acid], inverse gas chromatography, polymer-solvent interactions.

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