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Liquid–Liquid Equilibrium for Ternary Mixtures Methanol-Glycerol- Biodiesel from *Jatrophacurcas*

Campo Castrillón E.[1], Romero Cabarcas M.[1], Gonzalez-Delgado A.[1], SánchezTuiran E.[1], Ojeda Delgado K.*[1]

[1] University of Cartagena, Chemical Engineering Department, AvenidadelConsuladoCalle 30 No. 48 – 152, Cartagena, Colombia.

Abstract: With the emergence of new raw materials for biofuels production, it is important to study systems formed by the chemical species involved in order to improve the efficiency of processes for a viable large-scale production. This paper presents an experimental methodology developed for the determination of the liquid-liquid equilibrium (LLE) data of the ternary system methanol-glycerol-biodiesel obtained from the seeds of *Jatrophacurcas*. UNIQUAC and NRTL models were fitted properly to experimental data with a mean deviation percentage of 2.29 % and 2.38 %, respectively. In addition, LLE was simulated at 30 and 60 °C, obtaining a correlation factor (R^2) of 0.9597 from Othmer-Tobias equation which shows the reliability of the data obtained. This research provides experimental information about crude oil, refined oil and biodiesel from *Jatrophacurcas*crops produced in the Colombian Caribbean region, thermodynamic data and parameters for LLE calculations of the system described.

Keywords: Liquid-liquid equilibrium, Biodiesel, Transesterification, Gas chromatography, Interaction parameters..

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