

Study of density and viscosity for ternary mixtures biodiesel+diesel fuel + bioalcohols

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Abstract The increase of the environment pollution, together with the instable price of crude oil led in the last years to a renewed focus on biofuels. As the demand in the transport sector is continuously increasing, and taking into account the benefits of biofuels, it is expected that the market demand for biofuels to be increased in the near future. In this context, it will be interesting to investigate if new types of biofuels could be used as mixtures with other fuels for internal combustion engines. The aim of this paper is the study of density and viscosity variation with composition and temperature for ternary mixtures biodiesel + diesel fuel + bioalcohol. Experimental densities and viscosities data for ternary blends diesel fuel+biodiesel +isopropyl alcohol/1-butyl alcohol are presented, and some empirical models proposed to predict these properties for binary systems diesel fuel+biodiesel are evaluated for the proposed ternary blends.

Keywords: Biodiesel, bioalcohols, ternary mixtures, density, viscosity
