

ABSTRACT

At this time the needs of fuel oil increased as the human population increases and development of technology while the reserves of petroleum resources who comes from depleting fossil because of its nature which could not be updated. Several countries including Indonesia began doing research in the search for renewable fuel, one of which is biodiesel.

The purpose of this research is to know the nature of a mixture of palm oil and Castor oil as well as the influence of the variation of the composition of the oil mix. The raw materials used, namely palm oil and Castor oil with comparison methods volume 100, 90/10, 80/20, 70/30, 60/40, 50/50, 40/60, 30/70, 20/80, 90/10 100% on 30-minute reaction time and temperature reaction of 160 ° C. in comparison to the volume of 50:50% There is a variation of reaction time of 30, 60, and 90 minutes. The parameters tested include Density, Viscosity, Flash Point, and a heat Value.

The result value of the density obtained 890.69 kg/m³-932.604 kg/m³ and viscosities 37.7 cSt – 173.5 cSt. On the value of flash point gained 344 ° C-315 ° C and heat value of 9383.845 cal/g – 8872.017 cal/g. density and viscosity Values will be higher if the sum of the percentages of castor oil higher. Inversely proportional to the value of the flash point and thermal value declined in percentage of castor oil.

Key words: Density, Flash point, castor oil, palm oil, Viscosity, heat Value.