

Study on ability of palm oil as viscosity index improvement (VII) additive in thermal stability (base mineral oil - Cooking palm oil)

Abstract

This research was conducted to study the thermal stability of cooking palm oil when subjected to heat in an attempt to study its ability as viscosity index improver. Four samples of mixture of Shell Rimula X SAE 40 engine oil and cooking oil at different compositions were heated over a three-hour cooking period, to provide a time course of changes in mixed oil temperature, vapor temperature, and mass of mixed oil. The significant data change of the temperature and mass over time proposes that the thermally stable cooking oil is a suitable viscosity index improver. The effect of heat on mixed oil temperature, vapor temperature, and mass are evaluated to analyze the reliability of cooking oil as Viscosity Index Improvement (VII) based on thermal stability. The Shell Rimula X SAE 40, after being added with fresh cooking palm oil, is expected to exhibit a stable viscosity-temperature curve.