

Physiochemical and electrical properties of refined, bleached and deodorized palm oil under high temperature ageing for application in transformers

ABSTRACT

This paper presents a high temperature ageing study of refined, bleached, and deodorized palm oil (RBDPO) olein at 170 °C in the presence of air. In total, two types of RBDPO were examined. The physiochemical and dielectric properties of RBDPO were measured and analysed. We found that the moisture and viscosities for both RBDPO increased as the ageing progressed, whereas the acidities fluctuated at very low levels at less than 0.005 mg KOH/g. The ageing on the AC breakdown voltages of both RBDPO were not affected throughout the ageing processes. The dielectric dissipation factors and relative permittivities for both RBDPO increased as the resistivities decreased with the ageing time.

Keyword: High temperature thermal ageing; Open condition; Refined; Rleached and deodorized palm oil; Physiochemical and electrical properties