

ABSTRACT

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Title : *Analysis of Dielectric Characteristics of Transformer Oil after Purification with Heating Activated Bentonite Adsorbent*

The dielectric characteristics of transformer oil after purification with heating-activated bentonite adsorbent have been analyzed. The purpose of this study was to improve the dielectric characteristics of transformer oil using heating-activated bentonite adsorbent. Bentonite was heated from room temperature to 400oC. Transformer oil was purified by mixing 15 grams of heated bentonite into 500 ml of Shell Diala S4 transformer oil. The breakdown voltage, moisture content, and viscosity of transformer oil before and after purification were tested using HV-TERCO high voltage tester, Memmert U10 Oven, and Viscotester VT-06, respectively. The results showed that the breakdown voltage increased from 13.48 to 34.77 kV, the moisture content decreased from 1.44% to 0.53%, and the viscosity increased from 0.12 to 0.36 cSt. Thus, the addition of heating-activated bentonite adsorbent to transformer oil can improve the dielectric characteristics of the oil so as to help reduce waste insulating oil through the recycling process by purification.

Keywords: Transformer Oil, Liquid Dielectric, Bentonite, Penetrating Voltage, Water Content, Viscosity.