



Synthetic Ester-Based Oils and Their Application in Power Industry

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Abstract. Suitable (biodegradable) substitution of classic mineral petroleum-based oils used in power transformers is studied. Paper presents test results of six paper-oil insulation systems varying by different type of oil. Three common transformer oils and three new synthetic oils (never used in power transformers before) were selected for the purpose of experiment. The oils have been exposed to accelerated thermal aging (at the temperature of 90 °C) and their properties were measured in time intervals of 0, 50, 125, 225, 500, 1000 and 2000 hours.

Key words

Power transformer, synthetic oils, biodegradable oils, loss factor, insulating resistance, polarization index, infrared spectroscopy.

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