

THE IMPACT OF PARTIAL DISCHARGE ON THE DIELECTRIC PROPERTIES OF REFINED BLEACHED AND DEODORIZED PALM OIL(RBDPO)

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Abstract—Several years ago, electric power equipment, insulation oil played the roles of the electrical insulation. Mineral oil has been widely used in oil impregnated electric equipment for many years. It is extracted from petroleum that is a non-renewable energy source, so its flash/fire point is low and might run out in the future. Therefore, this petroleum based oil needs to be replaced with a new type of oil that is friendly to the environment. Refined bleached and deodorized palm oil (RBDPO) is a palm based oil that has been modified in order to overcome the environment and oxidation problems. This paper deals with the experimental testing to investigate the impact of partial discharge (PD) on the dielectric properties of RBDPO. The performances of oil samples were evaluated using the test results of breakdown voltage where the Breakdown voltage was measured According to the international electrotechnical commission (IEC 6056) using standard test cell. The experiments were found that the RBDPO results were in good agreement and have high biodegradability.

Index Terms— Petroleum based mineral oil; Refined bleached and deodorized palm oil; partial discharge; dielectric properties.