

Study on synthesis of TMP-ester according to doped amount of potassium fluoride

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The mineral insulating oil is likely to leak and occur many kind of the pollution. The insulating oil using environmentally-friendly and non-toxic vegetable oil is gaining more and more attention. In this work, we studied esterification with TMP(Tri-methylol propane) and oleic acid so that it keep the high flash point and improve pour point of vegetable oil. The synthesis was carried out using the KF doped HAP as catalyst according to reaction time and doped amount of KF for the conversion of oleic acid and properties of insulating oils. The KF doped HAP catalysts were characterized by temperature programmed desorption(TPD), BET surface area, scanning electron microscopy(SEM), X-ray diffraction. We have found that the activity of TMP-ester was remarkable when the synthesis was carried out using KF 30wt%/HAP.