EFFECT OF PENTAERYTHRITOL ABIETATE AS TACKIFYING AGENT IN SYNTHESIS POLYURETHANE FROM CRUDE PALM OIL

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JULY 2013

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ABSTRACT

EFFECT OF ADDITION PENTAERYTHRITOL ABIETATE AS TACKIFYING AGENT IN SYNTHESIS POLYURETHANE ADHESIVE FROM CRUDE PALM OIL

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A synthesis of thermoplastic polyurethane adhesive (PU) made up from natural base replacing petroleum base was carried using crude palm oil. The preparation of polyurethane carried out using two steps, which are preparation of alkyd resin and the second step is the preparation of polyurethane adhesive. Alkyd resin was prepared from crude palm oil as a natural base. Oleic acids contained in crude palm oil create bonding with glycerol and phthalic anhydride to produce alkyd resin. Polyurethane adhesive is the final product which prepared using the reaction between alkyd resin and toluene diisocyanate (TDI). Then, pentaerythritol abietate added into the hot polyurethane adhesive to increase the adhesiveness of the polyurethane adhesive with optimum ratio 4.7 wt%. FT-IR is used to identify the characterization chemical contain in polyurethane adhesive. The universal testing is used to identify the strength of internal bonding and the maximum load of the polyurethane adhesive.