

BUFFER CAPACITY EFFECT OF MERANTI PA'ANG (*Shorea bracteolata*) AND SESENDUK (*Endospermum diadenum*) ON THE REACTIVITY OF UREA FORMALDEHYDE AND PHENOL FORMALDEHYDE ADHESIVE

By

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ABSTRACT

BUFFER CAPACITY EFFECT OF MERANTI PA'ANG (*Shorea bracteolata*) AND SESENDUK (*Endospermum diadenum*) ON THE REACTIVITY OF UREA FORMALDEHYDE AND PHENOL FORMALDEHYDE ADHESIVE

Buffer capacity of *Shorea bracteolata* and *Endospermum diadenum* are expected to be different according to species, *Shorea bracteolata* and *Endospermum diadenum* contains different pH value that cause different result that leading to differing behaviour and cure properties for urea formaldehyde and phenol formaldehyde. So, to ensure good bonding quality between resin and substrate, different glue mix formulation is needed. *Shorea bracteolata* and *Endospermum diadenum* hot water extractives shows the effect of buffer capacity of hydrochloric acid (HCl) and sodium hydroxide (NaOH) toward the reactivity of urea formaldehyde and phenol formaldehyde. The data was collected by using buffer capacity test procedure and gelation time test procedure. From the study, *Shorea bracteolata* has highest buffer capacity toward sodium hydroxide (NaOH) and has the fastest gelation time for urea formaldehyde. *Endospermum diadenum*, it has the highest buffer capacity toward hydrochloric acid (HCl) and the fastest gelation time for phenol formaldehyde. For the wood shape, the study shows that, particle shape has the highest buffer capacity with hydrochloric acid (HCl) and sodium hydroxide (NaOH), while wood chip is the lowest. For the gelation time test, wood chip has the fastest gelation time with urea formaldehyde and phenol formaldehyde while particle shape is the slowest.

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