

**AGING EFFECT OF UREA FORMALDEHYDE ON PARTICLEBOARD WITH  
DIFFERENT RESIN CONTENT (*Endorspermum sp.*)**

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## ABSTRACT

### AGING EFFECT OF UREA FORMALDEHYDE ON PARTICLEBOARD WITH DIFFERENT RESIN CONTENT

*(Endorspermum sp.)*

Nowadays, there are higher demands in the wood composite industries because there is the increasing in the furniture demands due to the new housing that were built. Due to this matter, the demands of urea formaldehyde resin also increased because it was used as a binder in the wood composite industries for making a particleboard, plywood, medium density fibreboard(MDF) and others panels products. Therefore, the objective of this study is to know the chemical properties (pH, viscosity, specific gravity, free formaldehyde) of the resin over time and also the mechanical and physical (bending test, internal bonding, thickness swelling and water absorption) properties of the particleboard by using the urea formaldehyde resin that were aging with different resin content (9% and 11%). Mechanical properties of the particleboard were tested conforming to the British Standard (BS EN 310, 317 and 319: 1993). The result showed that for the chemical testing of urea formaldehyde resin pH is decreased over time. Viscosity and specific gravity shows an increasing in the value. Meanwhile, for the free formaldehyde testing, the result obtained is inconsistent. Besides that, for the mechanical and physical testing, there is arise in the value for bending strength, internal bonding, thickness swelling and water absorption as well as the aging of the urea formaldehyde resin is increase.