

Efficacy study of POLYMATE -777A & POLYMATE -777P as a formaldehyde scavenger to minimize the formaldehyde emission of the wood composites made by both amino and phenolic resin.



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Abstract

Formaldehyde emissions from wood composites, which are commonly used in various wood based panel industries, pose significant environmental and health concerns. This project was aimed to assess the effectiveness of POLYMATE-777A and POLYMATE-777P as formaldehyde scavengers to mitigate formaldehyde emissions from wood composites manufactured using amino and phenolic resin as binders. The study involved a comprehensive evaluation of formaldehyde emission reduction in wood composites. A series of experiments were conducted to investigate the impact of POLYMATE-777A and POLYMATE-777P on formaldehyde emissions from wood composites. Various parameters, including resin type, scavenger concentration, curing conditions, and composite formulation, were systematically examined. Results from the study indicated that both POLYMATE-777A and POLYMATE-777P exhibited notable formaldehyde scavenging capabilities. The reduction in formaldehyde emissions was dependent on the scavenger concentration, with higher concentrations yielding more significant reductions. The scavenger not only reduces the formaldehyde emission of the ply board but also increases the bonding properties and technological properties of the board in some extent. In conclusion, this project demonstrated the potential of POLYMATE-777A and POLYMATE-777P as effective formaldehyde scavengers for wood composites. The findings offer a promising solution to minimize formaldehyde emissions, contributing to improved environmental and health outcomes in wood composite industries.

Keywords: wood composite industries, Formaldehyde emission, Effective formaldehyde scavenger, Polymate-777A and Polymate-777P, Technological properties

