

NEW CROSS LINKED POLY-BADGE AS A CARRIER TO TRANSPORT PHENOL USING POLYMER INCLUSION MEMBRAN (PIM)

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ABSTRACT

The new compound, Poli-BADGE as a carrier compound in phenol transport has been successfully synthesized. The compound is the result of crosslinking between polieugenol and bisphenol A diglycidyl ether in dioxane under alkaline condition. The polyeugenol derivative is then tested for its capability as a carrier compound for phenol transport using polymer inclusion membrane (PIM) method. The characterization of the synthesized compound was performed using FTIR and TG-DTA, while the PIM membrane was characterized using FTIR and SEM. Based on the characterization, the results show that poly-BADGE has been successfully synthesized. The loss of a typical vinyl unsaturated group (-CH = CH₂) eugenol at a wavelength of 995.27 cm⁻¹ is one of the parameters for the success of the polymerization process. Characterization of TG-DTA also confirm the success of the polymerization process as indicated by the difference of temperature T_{5%}, T_{20%}, T_{50%} and T_{max} in poly-BADGE with the control compound, polieugenol. Furthermore, the results also show that membranes containing poly-BADGE can act as carrier compounds as indicated by their ability to transport phenol repeatedly.

Kata kunci: PIM, co-EDAF, poli-BADGE, Polieugenol