

ABSTRAK

STUDI TRANSPOR FENOL MENGGUNAKAN CO-EDAF [KOPOLI(EUGENOL-DIALIL FTALAT)] SEBAGAI SENYAWA PEMBAWA DENGAN METODE *POLYMER INCLUSION MEMBRANE* (PIM)

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Bahan pencemar yang ada di lingkungan perairan salah satunya dapat disebabkan oleh senyawa fenol. Dalam penelitian ini telah dilakukan studi transpor fenol menggunakan kopoli(eugenol-DAF) sebagai senyawa *carrier* dengan metode *polymer inclusion membrane* (PIM). Beberapa parameter yang mempengaruhi proses transpor fenol telah dilakukan di antaranya pH fasa sumber, konsentrasi NaOH fasa penerima, ketebalan membran dan waktu transpor. Sintesis kopoli(eugenol-DAF) dilakukan melalui reaksi polimerisasi antara eugenol dengan dialil-ftalat menggunakan katalis $\text{BF}_3\text{O}(\text{C}_2\text{H}_5)_2$. Hasil sintesis berupa serbuk dikarakterisasi menggunakan FT-IR. Pencetakan membran cair tersusun dari 3 komponen yaitu kopoli(eugenol-DAF), PVC, dan DBE. Karakterisasi membran dilakukan dengan menggunakan SEM untuk mengetahui morfologi permukaan membran dan FTIR untuk mengetahui interaksi antara fenol dengan kopoli(eugenol-DAF). Konsentrasi fenol setelah transpor ditentukan dengan metode spektrofotometri UV-Vis menggunakan reagen 4-aminoantipirin pada panjang gelombang maksimum = 456 nm. Hasil penelitian menunjukkan bahwa fenol tertranspor secara optimal pada pH fase sumber 5,5, konsentrasi larutan NaOH pada fase penerima 0,1 M, ketebalan membran tipe $T_{0,54}$ (berat membran 0,54 g) dan waktu transpor selama 48 jam dengan % fenol yang tertranspor sebanyak 90,5%. Keberadaan logam pada fenol dapat mengganggu terjadinya transpor fenol dari fasa sumber ke fasa penerima.

Kata kunci : Fenol, Kopoli(eugenol-DAF), *Polymer Inclusion Membrane* (PIM)

ABSTRACT

STUDY OF PHENOL TRANSPORT USING CO-EDAF [COPOLI (EUGENOL-DIALLYL PHTHALATES)] AS CARRIER COMPOUND WITH POLYMER INCLUSION MEMBRANE TECHNIQUE (PIM)

By

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Existing contaminants in the aquatic environment, one of which can be caused by phenol compounds. In this research has been conducted using phenol copoli transport study (Eugenol-DAF) as the carrier with the compound method of polymer inclusion membrane (PIM). Several parameters that effect the transport process of phenol has been done in varian pH, the concentration of NaOH source and receiver phase, the thickness of the membrane and transport time. Synthesis of copoli(eugenol-DAF) is done through a polymerization reaction between eugenol with diallyl-phthalate levels using the catalyst $\text{BF}_3\text{O}(\text{C}_2\text{H}_5)_2$. The results of the synthesis of floured are characterized using FT-IR. Printing liquid membranes composed of 3 components namely copoli(eugenol-DAF), PVC, and DBE. Characterization of membrane is carried out using SEM to find out the morphology of the surface membrane and FTIR to know the interactions between the phenol with copoli(eugenol-DAF). Phenol concentration after the transport is determined by UV-Vis spectrophotometry method using reagent 4-aminoantipirin at a maximum wavelength of $\lambda = 456 \text{ nm}$. The results showed that the phenol optimally transport at pH 5.5 source phase, the concentration of NaOH 0.1 M receiver on phase, the thickness of the membrane type $T_{0,54}$ (membrane weight 0.54 g) and the transport time for 48 hours with% transport phenolic as much as 90.5%. The presence of metal on phenol can affect the occurrence of phenol from the transport phase phase source to the receiver.

Keywords : Phenol, Copoli(eugenol-DAF), *Polymer Inclusion Membrane* (PIM)