## SYNTHESIS COPOLY EUGENOL DIVINYL BENZENE 8% USING BORON TRIFLOURO DIETHYLETHER AS CATALYST WITH POLYMERIZATION TECHNIQUES

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## Abstract

Phenol is one of the components in the waste water which is corrosive to the skin as well as carcinogenic, therefore phenol is classed as toxic and hazardous substances, so that the process of separation and recovery of phenol from waste water is very important to protect and preserve the environment. Phenol can be separated using liquid membrane. This study aims to synthesise a polymer that serves as the carrier compounds, namely Copoly (eugenol-divinyl benzene) or Co-EDVB 8%. Synthesis involving between eugenol with DVB 8% as agents continued the cross is done by polymerization using a catalyst of boron triflouro diethylether  $[(BF_3O(C_2H_5)_2)]$ . Polymer synthesis result is then calculated yield is determined melting and properties of solubility in several organic compounds. Further polymer results of the polymerization were characterized using FTIR and TG-DTA. Compounds result showed light brown with a yield of 59,108%, The melting point of the polymer obtained 98,5-106,5 °C. Soluble polymer synthesized in chloroform, diethyl ether and tetrahydrofuran. Characterization of the Co-EDVB 8% show that polymerization eugenol with DVB 8% cross connector agent has been synthesized, it is characterized by spectra IR result is the loss of the vinyl group  $(-CH = CH_2)$  in eugenol at wave number 995.27 cm<sup>-1</sup> and loss of allyl (C=C) group at wave number 1636,5 cm<sup>-1</sup>. The result of the curve shows that the resistance of the Co-EDVB 8% compound reaches a temperature of 401.4 °C. Based on the results of FT-IR and TG-DTA characterization, the composition of the Co-EDVB 8% has been successfully synthesized.

Keywords: Co-EDVB, Phenol, Liquid Membrane, Polymerization.