The Synthesis of Copoly-Eugenol DVB 4% as Carrier Compound for Phenol Transport in Artificial Waste using PIM Method

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Abstarct. Phenol is produced and widely used for industrial purposes. As a result, many phenolic wastes are wasted into the environment, especially in the aquatic environment. Due to the characteristic of phenol which is harmful for the environment, the separation process of phenol from the wastewater is carried out using the of Polymer Inclusion Membrane (PIM) method. The membrane was made from copoly (eugenol-DVB) 4% as a carrier compound which has been synthesized, polyvinyl chloride (PVC), and diethyl benzene (DBE) as a plasticizer. This membrane was then used as phenol transport test for repeated use of PIM and in artificial waste. The synthesized of copoly-EDVB 4% obtained as a slightly orange colored powder with a yield of 92%, melting point in range 98-101^{o}C. The result of IR spectroscopy of copoly-EDVB 4% powder showed crosslink between eugenol and divinyl benzene (DVB) shown by the presence of the wave number at 3511.2 cm^{-1} indicating the presence of –OH group from eugenol. The PIM were characterized by IR spectroscopy before and after repeating used of phenol transport and after being used for artificial waste, while the contents of phenol transported from the source phase to the receiving phase were analyzed by UV-Vis spectroscopy.