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PERVAPORATION MEMBRANE FROM EPOXIDIZED NATURAL RUBBER



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ศูนย์วิทยทรัพยากร

จุฬาลงกรณ์มหาวิทยาลัย

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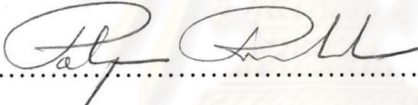
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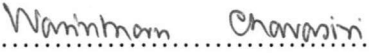
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This research aims to synthesis pervaporative membranes from amine crosslinked epoxidised natural rubber suitable for separation of organic solvent mixture. The membranes were prepared by treatment of ENR with ethylenediamine, diethylenetriamine and *p*-phenylenediamine at various amine concentration, various curing temperature and various curing time. These amine crosslinked ENR membranes were investigated their mechanical properties, gel content, solvent swelling, permeability and permselectivity between chloroform and ethanol. The results showed that the suitable conditions for preparing the appropriate membranes were curing temperature of 105 °C (10 min) using 3 phr of ethylenediamine for the ethylenediamine crosslinked ENR membrane, curing temperature of 110 °C (10 min) using 3 phr of diethylenetriamine for the diethylenetriamine crosslinked ENR membrane and curing temperature of 120 °C (10 min) using 3 phr of *p*-phenylenediamine crosslinked ENR membrane. These appropriate membranes were investigated their permeability for chloroform, for ethanol and for chloroform and ethanol mixture. It was found that chloroform permeated through the membranes faster than ethanol either pure solvent of the solvent mixture. Thus, The amine crosslinked ENR membranes could be useful to develop into efficient membranes for separation of chloroform from chloroform and ethanol mixture.

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