

The characterization of facilitated transport membranes containing SPEEK with various silver salts for olefin/paraffin separation

이남선^{1,2}, 최대기^{1,*}, 김훈식²

¹한국과학기술연구원(KIST); ²경희대학교

(dkchoi@kist.re.kr*)

The separation of olefin/paraffin mixtures is one of the most important processes in the petrochemical industry. Membrane technology has been proposed as an alternative approach to the conventional distillation process for olefin and paraffin separation. Membrane separation using facilitated transport membrane could be an alternative in aspects of decreasing the costs and high olefin selectivity. Polymers such as sulfonated poly(ether ether)ketone (SPEEK), Cellulose acetate (CA) have been used as polymer matrix to dissolve the silver salts for the facilitated transport. There have been many reports on the facilitated transport of olefin by using supported liquid membranes, ion exchange membranes, or dense polymer membranes containing silver ions as carriers. Only C2 - C4 olefin/paraffin mixtures have been separated using facilitated polymer membranes containing silver ions.

In this study, the polymer-silver salts membranes using π -complexation were applied to separate isoprene component from C5 mixtures. Here in, we observed to remarkable separation of isoprene from C5 mixtures and confirmed in separation efficiency of membranes containing polymers-silver salts.

Permeability and selectivity to olefin over paraffin will be treated in this paper with polymers membranes containing various silver salts.